

SOCIAL INNOVATION CHALLENGES

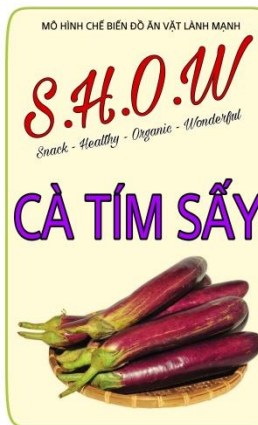
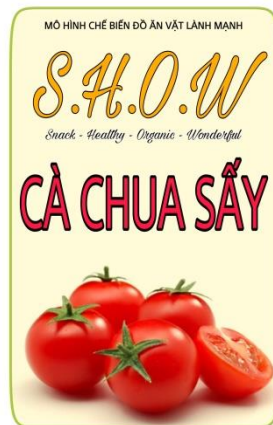
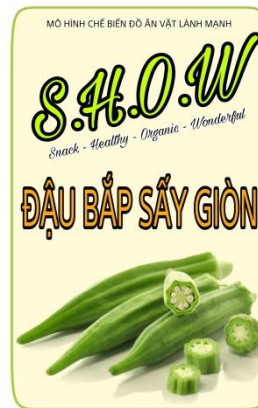
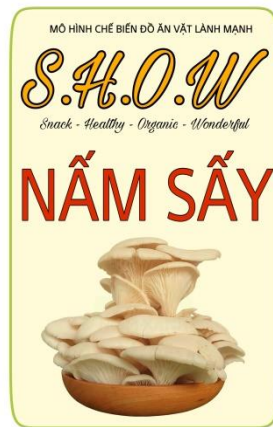
SOLUTIONS FROM VIETNAM TEAMS

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V1. HEALTHY JUNK FOOD FROM HOME-GROWN MATERIALS – “S.H.O.W” (#3)

Proposed group: Quang Vinh Group, Thai Nguyen City

Instructor: Ms. Hoa Thi Hong Hanh, TUMP



Thai Nguyen, tháng 9 năm 2022

Background

According to the World Health Organization (WHO), adolescence is a very important transition period in terms of psychophysiology and nutrition. At this stage, students have to study stressfully and under pressure to pass the most important exams. These pressures significantly affect the diet. Students have to study multiple shifts a day, so they often skip breakfast or eat too little and get hungry in the middle of the morning (short term hunger). Dinner eaten late due to going to school 3rd shift or home away, eating less due to fatigue or because food is no longer tasty and attractive. Many students eat supplements between meals. However, these are mainly fast, processed, low-nutrition foods.

The nutrition of students is also unbalanced due to habits and preferences. A study on nutrition among students in Hanoi showed that 93.6% of students said that they ate what they liked but that meant less vegetable, and a low awareness of nutrients in the vegetable group (60.4%) [1]. The TUMP/NAS study conducted in Thai Nguyen in 2021 showed that the rate of green vegetable consumption among adolescent women was low (66% for green leafy vegetables, and 24.1% for vegetable groups). Ensuring good nutrition for adolescent girls is essential to limit the negative impacts of undernutrition on health, learning and employment. Therefore, the team found that snack products (complementary foods) that are healthy, nutritious and convenient to use could provide nutrition at snack times when it is necessary to replenish energy quickly.

The area where the group operates is Quang Vinh ward, Thai Nguyen city. Quang Vinh is a ward in the city center where the standard of living is stable with diverse occupations. Adolescent females live mainly in families that enjoy basic conditions, so it is rare for adolescents to be malnourished due to poverty. These girls study mainly in the key schools of the city so the pressure to study is huge.

Objectives

Households in Quang Vinh often do not have garden land to grow vegetables or raise chickens to supplement their diet with clean food sources, but people often grow vegetables in Styrofoam containers, or self-made gardens on rooftops. From those bases, Quang Vinh group proposes as nutritional solution to "***build a healthy snack from homegrown ingredients***" with the following goals

- Build a model of processing healthy snack products from home-grown ingredients, to enhance energy and nutrition among adolescent girls quickly and conveniently.

Activities and implementation

We build a model with the expectation that healthy snack products are created from ingredients grown and processed at home by households in Quang Vinh ward. Our first goal is to provide complementary foods to the adolescent girls themselves in each family. Then we aim for large-scale production to supply the market. To achieve that, we divide the model into 2 phases

- Phase 1: Healthy snack production at home
 - Activity 1: Building models for product growing families

- Through the ward women's association, mobilize families (especially families with underage girls) to participate in growing green vegetables such as vegetables, cowpeas, eggplants, mushrooms, okra at home using a Styrofoam container system.
- Provide instructions for growing vegetables in Styrofoam containers and provide original vegetable varieties to participating households.
- Harvesting raw materials
- Activity 2: Processing healthy snack products from ingredients obtained in activity 1
- Prepared by family members themselves at home
- Provide instructions for preparing some healthy snacks such as: dried mushrooms, dried okra, eggplant
- Use of the product in households
 - Provide healthy snack products to family members (especially families with adolescent females);
- Phase 2: Large-scale production to distribute healthy snack products to the market
 - Activity 1: Building a large-scale supply of raw materials
 - Continue to expand the network of families involved in growing raw materials
 - Link with vegetable gardens to build raw materials to ensure that they are grown according to the homogeneous method of the whole model.
 - Activity 2: Manufacturing products using industrial machinery
 - Industrial slicer
 - Industrial dryer/cabinet dryer
 - Activity 3: Distributing products to the market
 - Concentrated in primary, middle and high schools in the area; supermarkets; retail stores; mobile vending vehicles.

In addition, the model aims at green production, ensuring food safety and hygiene when processing healthy snack products by:

- Use excess products during food processing as biofertilizer to fertilize crops
- Avoid chemical fertilizers, chemical pesticides in the process of growing raw materials
- Avoid preservatives when preparing dishes
- Use paper bags to pack products to help protect the environment

Stakeholders and their roles

- * Model building team manages and coordinates the activities of the cooperative
- * Households in Quang Vinh ward agree to participate in the model y contributing to the supply of raw materials. Special advocacy is made for households with adolescent females to participate
- * Vegetable kingdoms in Quang Vinh ward participate in product production
- * Product distribution is ensured by the model building team, families with adolescent females and adolescent females themselves. In addition, one the cooperative is able to distribute products to the market, the cooperative invites more families with workers to participate in the production of milk and cake.

Nutritious products of cooperatives

Here, we introduce some snacks that are staple products of our model. Products may change seasonally to match the supply of natural ingredients.

3.1 Dried okra

- Nutritional Facts (*) (estimated in 28g of finished okra)

Okra chips

Select portion size: 1 oz = 28.0 g

Nutrition Facts	
Portion Size	28 g
Amount Per Portion	
Calories	115
% Daily Value *	
Total Fat 3g	4 %
Sodium 35mg	2 %
Total Carbohydrate 21g	8 %
Dietary Fiber 6g	21 %
Sugar 1g	
Protein 2g	4 %
Calcium 40mg	3 %
Iron 0.4mg	2 %

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contribute to a daily diet. 2000 calories a day is used for general nutrition advice.

(*) Nutritional ingredients are looked up from the source: [NutritionValue.Org](https://nutritionvalue.org)

- Shelf life: 7 days from the date of manufacture
- How to store: Keep in a cool place
- Price (expected): 35000/100g

➤ 3.2 Dried mushrooms

Dried king oyster mushroom by ASSI

Select portion size: 20 gm = 20.0 g

Nutrition Facts	
Portion Size	20 g
Amount Per Portion	
Calories	64
% Daily Value *	
Total Fat 0g	0 %
Total Carbohydrate 13g	5 %
Dietary Fiber 1g	4 %
Sugar 1g	
Protein 3g	6 %
Calcium 0mg	0 %
Iron 0.7mg	4 %

* The % Daily Value (DV) tells you how much a nutrient in



➤ (*) Nutritional ingredients are looked up from the source: [NutritionValue.Org](https://nutritionvalue.org)

(**) Nutritional composition has differences between each type of mushroom used as raw materials. Here we are using oyster mushrooms for testing

- Shelf life: 7 days from date of manufacture

- How to store: Keep in a cool place
- Price (expected): 65000/100g

- **3.3 Dried eggplant**
- Ingredients: eggplant
- Nutrition Facts (*)

nutritionix
a Syngenta Company

Search Food Database

Stuffed Dried Eggplant - 100 g

Nutritionix

Nutrition Facts	
Serving Size: 100 g (100g)	
Amount Per Serving	
Calories 137	Calories from Fat 55
% Daily Value*	
Total Fat 6.1g	9%
Saturated Fat 1.7g	9%
Trans Fat 0.1g	
Cholesterol 17mg	6%
Sodium 132mg	6%
Potassium 153mg	4%
Total Carbohydrates 14g	5%
Dietary Fiber 0.6g	2%
Sugars 3g	
Protein 6.4g	
Vitamin A	1%
Vitamin C	4%
Calcium	2%
Iron	5%

* Percent Daily Values are based on a 2000 calorie diet.

(*) Nutritional ingredients are looked up from source: [Nutritionix Common Foods](#)

- Shelf life: 7 days from date of manufacture
- How to store: Keep in a cool place
- Price (expected): 35000/100g

Developing a Brand identity and Communicating the Solution

Name: S.H.O.W, Meaning: Snack – Healthy – Organic – Wonderful (Healthy snack products are manufactured from clean ingredients to bring excellent quality)

Main color: yellow background

Activities and implementation

Instructions for growing some ingredients at home

- Source of seed purchase: large wholesale markets, farms, supermarkets ... Diverse sources, quality and reasonable prices

- Some clean food stores in Thai Nguyen: VinMart supermarket system, Fuji clean fruit system, Minh Cau supermarket, Lan Chi supermarket, Phuong Linh Farm clean vegetables,...
- Growing raw materials at home: growing in foam boxes

Pros and cons growing in foam boxes at home

Advantage	Shortcoming
<ul style="list-style-type: none"> - Provides clean organic vegetables, ensure safety, no pesticides, no chemical fertilizers - Simple, easy to care for, convenient, does not cost much - Quick harvest time, less time consuming - Create around green scenery, airy air in the living environment 	<ul style="list-style-type: none"> - Grow in foam containers that are not durable, prone to cracking, damaged if moved carelessly - If planted incorrectly, the speed of vegetables growth will be slow - Growing vegetables in Styrofoam containers is not aesthetically pleasing, easy to reduce the beauty of the house

Some other vegetables are easy to grow in Styrofoam containers: lettuce, spinach, spinach, tomatoes, carrots, peas,...

Growing mushrooms at home

- Grow straw mushrooms in buckets and pots
- Grow oyster mushrooms with plastic bottles, with sawdust

Materials to grow oyster mushrooms with plastic bottles

- 1 little oyster mushroom stem
- 1 large plastic bottle
- 1 plastic bag
- A few pieces of cardboard

How to do it:

- Step 1: Cut off the top of the plastic bottle, punch small holes in the bottle body to breathe air and prevent waterlogging.
- Step 2: Using cardboard sheets, cut into sheets just enough to dip with water to wet and then place in a bottle a layer of mushroom body accompanied by an alternating layer of cardboard paper.
- Step 3: Use a plastic bag to cover the plastic bottle, cut a few small marks on the plastic bag to get air
- Step 4: Regularly check the moisture content of the mushrooms, about 2-3 days, add water once. Bring mushrooms to a dark room for about 2 weeks mushrooms before use.

- *Photos of mushroom growing groups at home*



Growing eggplant/tomato/okra in a Styrofoam container

- **Material:**

- Seeds of all kinds
- Padding rack
- Styrofoam box
- Compost (if any)

- **How to do it:**

Depending on the crop material, there will be different planting and harvest times. Basically, it will go through 4 steps as follows

- Step 1: Tillage
 - Put the soil in a porous basket, reduce the soil, sprinkle with a little powdered lime and stir the soil in the sun to remove the fungus. Mix the soil with substrates such as rice husk ash, coconut fiber to make porous to retain moisture and drainage well, and mix more compost to make the soil nutrient-rich.
- Step 2: Choose standard seeds
 - Buying commercially packaged seeds from highly reputable establishments is a good and guaranteed choice.
- Step 3: Sowing seeds
 - Soak the seeds in warm water before sowing
 - Sow in moist soil, choose healthy seedlings after germination to transfer to planting in foam containers
- Step 4: Planting and harvesting

- Image of growing okra/eggplant in a Styrofoam container (image referenced from internet)



Product drying

- *A few ways to dry food:*
 - By oven
 - By air fryer
 - By microwave
 - By charcoal stove, wood stove
 - Take advantage of sunny days
 - Bring to the bakery thanks to drying
 -

Product packaging

- Zipper bag for food 1 side of glass in 1 side of kraft paper (cement paper bag)

Product distribution

- Main buyers: students (especially note that adolescent girls are students of grades 2-3 in the area);
- At household: production to self-supply nutritional products for family members
- Selling to the market: aiming to sell at school canteens, retail counters, supermarkets, mobile vending vehicles at markets in the area

Beneficiaries

- Direct beneficiaries: Adolescent females: using bakery and dairy products from the model.
- Indirect beneficiaries:
 - Households living and working in the area: creating a stable source of income and economic development.
 - Farmers, workers inside and outside the area: solving employment problems.

Advantages of the solution

- Does not require high technology
- Can create products for immediate use
- Cheap and readily available input materials
- Year-round harvest
- Can rely on the farming experience of the elders in the family

Disadvantages

- Product output: because the model is new, it takes more time for the product to reach consumers.
- Slow to replicate the model in many localities

Marketing

- Advertise on social networks: facebook, tiktok, instagram... Nutritional product users have easy access to product information.
- Introduce products to schools, retail outlets, supermarkets ...
- Make a mobile vending vehicle,...
- Calling for investors, persuading people around to participate through farmers' associations, women's unions, media, newspapers ...

Cost

Initial investment: seed support, foam containers, and planting/processing technical guidance

Community mobilization

- Through the ward farmers' association: deploy the model to households in the ward
- Through the neighborhood women's association: mobilize mothers of adolescent children to participate in growing and processing healthy snack products
- Contact schools, retail points, supermarkets: product distribution to product distribution
- Through school youth unions to advertise products (integrated into nutrition counseling programs for adolescent girls held at schools);

Model sustainability

The model and income source should be able to maintain for a long time

Call for capital

Total capital raised: VND 100,000,000

Kế hoạch sử dụng vốn trong 6 tháng duy trì - mở rộng



Some pictures for advertising products to consumers



V2: Friendly Canteen (Circle T) (#6)

Quan Trieu ward

Group members:

1. Phung Thi Nguyen Ha: 18. HS student – Likes watching movies, listening to music, traveling.
2. Nguyen Thai Ha: 21. Student at Thai Nguyen School of Economics and Business Administration- Likes eating, doing business
3. Pham Thanh Phuong: 22. Accountant. Likes eating, watching movies,
4. Nguyen Thuy Linh: 21. Student at Thai Nguyen School of Economics and Business Administration- Likes watching movies, listening to music
5. Nguyen Thi Khanh Linh: 19. Student at Thai Nguyen University of Medicine and Pharmacy. Likes studying, watching movies, traveling

Instructor's name

- Ms. Bui Ngoc Diep: Thai Nguyen University of Medicine and Pharmacy
- Pham Nhu Quynh: student K12 Medicine at TUMP
- Nguyen Tra My: student K12 Medicine at TUMP

Background:

Adolescence is a sensitive period of rapid physical and mental development, with high nutritional needs. It is when one begins to identify and reinforce a preferred diet, which can be maintained during later adulthood. This is the ideal period to improve the diet, and establish a balanced and reasonable nutritional regimen to meet the growth, learning and functioning needs of the adolescent.

According to research by Nguyen Hong Phuong et al.: a survey of over 1000 adolescent girls in 12 wards and communes of Thai Nguyen province shows that local adolescents have an unbalanced diet and their diet lack nutrients. The rate of underweight (BMI < 18.5 kg/m²) is quite high (34.6%), overweight rate (BMI > 23 kg/m²) is 12.5%. This sample consumes LESS of healthy food groups, such as beans (23.3%), nuts (13.3%), vitamin A-rich fruit (3.7%), vitamin A-rich vegetables (20.8%), milk and dairy products (30.6%), eggs (41%); and consumes MANY food groups that should not be eaten or should be limited, such as fast food and instant noodles (28.3%); processed meat (27.5%); cereal-based sweets (21.5%); sweets, soft drinks (19,7); packaged snacks containing salt, deep fried foods (11.2%).

In terms of nutrients, local adolescents lack Calcium and Iron as the content of Calcium and Iron does not meet 50% of the body's necessary needs. This is because the diet is not balanced, there is not a variety of foods rich in micronutrients.

Nguyen Thi Huong Lan, Head of the Department of Nutrition at Saint Paul General Hospital said that each meal must be varied so it has enough nutrients for physical growth, brain development and health. In addition to meals at home, school meals are important.

Around the world, many countries have promoted people's physical quality and health with comprehensive interventions right from school meals. In Vietnam, the Ministry of Education and Training has implemented a model of school meals in primary schools nationwide. However, this has only been implemented at the primary level, not yet implemented at higher education levels. Currently, most high schools and universities in Thai Nguyen province do not have a canteen system to serve drinks and snacks. Some schools have canteens but have not focused on improving the diet for healthy nutrition. They sell a lot of unhealthy food such as: bimbim, sausage , noodles, etc. Those should not be eaten too much

Currently, the demand for breakfast and snacks among students is quite high. At recess or after school, students often buy snacks at the school gate. Eating at restaurants almost guarantees poor nutrition. Dishes such as shrimp balls, fish balls, beef balls, chicken balls, fried cheese, fried sausages, grilled meat skewers, orange-red drinks; and all kinds of confectionery and snacks that are not originated and have no label, are a health hazard for future generations.



For the above reasons, our team proposes as solution to set up a chain of friendly canteens specializing in providing healthy food in high schools and universities in Thai Nguyen province.

Objectives:

Aim: Build a chain of friendly canteen systems at high schools and universities in Thai Nguyen province. Carry out Pilot at Luong Ngoc Quyen High School - Thai Nguyen City

- ✓ Provide healthy, healthy food and drinks to meet the daily supplemental and energy needs of students in high schools and universities in Thai province. Nguyen (especially the female adolescent group).
- ✓ Change adolescents' perception of diet through nutrition communication forms in the canteen.
- ✓ Reduce consumption of unhealthy foods, foods that need to be limited or should not be eaten with more nutrients
- ✓ Build a network of propaganda students to share information, experiences and improved diets.
- ✓ Mobilize the participation of the school and the community to contribute in building solutions to improve the nutritional status of local students.

Time and place:

When: From November 2022 to November 2024

Where: Pilot at Luong Ngoc Quyen High School

Beneficiaries:

- ✓ Students in high schools and universities in Thai Nguyen province
- ✓ Adolescent women are the direct beneficiaries of the solution implementation.
- ✓ Officials and employees working in the School.
- ✓ All these groups will develop evidence-based nutritious eating habits and will have access to healthy healthy foods right on the campus of the University.

ACTIVITIES AND IMPLEMENTATION

Service Description:

- ✓ The canteen is open from 6 am to 5 pm. Products of the canteen include: breakfast, lunch, and snacks.
- ✓ The canteen's focus is on healthy foods (eg starchy foods made from brown rice, nut milks, snacks made from cereals, etc. and other nutritional products suited to customer requirements).
- ✓ Offer nutritious and energetic breakfasts to students because they often have the habit of fasting, or do not have breakfast in time.

- ✓ Delicious, nutritious, nutritious refreshments such as milk, smoothie juice from seasonal fresh fruits and vegetables, homemade milk from nuts, snacks from seeds, cereals while ensuring food safety and hygiene
- ✓ Provide delicious, nutritious and healthy lunch for students who need to stay for lunch.

Operation

- ✓ Sales method: direct
- ✓ The canteen must have a certificate of food safety and hygiene. Food producers and processors must be trained in food hygiene and safety.
- ✓ The food sold in the canteen will ensure that the price is equal to the market price, ensuring the most favorable conditions for students (not high income) to easily access and use healthy but affordable quality food products. During the year, the canteen runs many incentives and promotions.
- ✓ Designing the logo of the canteen, staff uniform, sticking the logo on the product to make a difference and professionalism.
- ✓ At the canteen, there will be a place for students to eat in a cool, clean space with self-service. That means there will be staff to make food for you at the counter, everyone will bring their own food to the appropriate sitting position, after eating you will have to bring your own dishes to the washing area for the staff to wash.
- ✓ In addition to sales, the canteen will focus on nutrition communication, promoting scientific nutritional diet through banners, slogans, pictures and paintings on the wall, building a network of propaganda students to share information, experiences and improved diets; enrolling the University participation to organize nutrition communication and discussion sessions to improve the diets of local students.
- ✓ The canteen still offers take-out service: paper food trays, boxes and cups will be used; We encourage patrons to bring their own containers and cups with a free cup of soy milk to customers who bring their own containers.
- ✓ The canteen will restrict single-use plastic items, and use stainless steel food trays, cups, bowls, chopsticks and spoons that are both hygienic and multi-use.

Products in the canteen:

- Breakfast variety includes vermicelli, pho, sticky rice, bread, dumplings.
- Lunch: There will be 1 fixed set of rice each day with dishes that are both nutritious and delicious. The meal plan changes according to the day of the week, focusing on adding more calcium and iron.
- A meal will include 1 rice, 1 soup, 2 savory dishes and 1 dessert. Each serving provides 4 main groups of nutrients: carbohydrates, proteins, fats, vitamins and minerals.
- Snacks:
 - Milk and dairy products:
 - All kinds of nut milk: homemade from nuts (such as soybeans, corn kernels, almonds, walnuts, lotus seeds, mix flavors...) to ensure food safety and hygiene, stick the canteen's own logo.
 - All kinds of animal milk (cow's milk, goat's milk), canned yogurt of famous brands such as Ba Vi, Vinamilk, TH true milk, nutifood...
 - Juices; smoothies from fresh vegetables, tubers and fruits (watermelon, orange, apple, pear, guava, celery, carrot, mix flavors...) are made directly at the counter according to the needs of customers, sold anywhere. , do not leave over the next day. Fresh juices and smoothies change the menu according to the season, prioritizing local fruits, vegetables and tubers.
 - All kinds of cereals, snacks from seeds, cereals: whole grain brown rice snacks, cereal cakes... of reputable brands or self-produced to ensure food hygiene and safety.

Example of a canteen menu:

MENU BỮA SÁNG

Bún gạo lứt bò

Bún gạo lứt, nước hầm xương, thịt bò, hành lá.



Phở gạo lứt ức gà

Phở gạo lứt, nước hầm xương, thịt ức gà, hành lá.



Xôi xéo

Gạo nếp, đậu xanh tách vỏ, thịt thăn làm ruốc, hành phi, (muối vừng).



Cháo thịt băm

Cháo trắng, xương, thịt băm (hành phi).



Bánh mì xá xíu

Bánh mì, thịt xá xíu, rau thơm, dưa chuột, sốt (tương ớt, tương cà, mayonnaise).



Bánh bao gạo lứt

Bột gạo lứt, bột nở, thịt băm, mộc nhĩ, nấm hương, trứng chim cút, hành tây.



MENU BỮA TRƯA

Thứ 2

- Cơm trắng, cơm gạo lứt
- Canh rau (thay đổi theo ngày)
- Sườn xào chua ngọt
- Trứng rán
- Hoa quả tráng miệng (thay đổi theo mùa)



Thứ 3

- Cơm gạo lứt, cơm trắng
- Canh sườn hầm rau củ
- Thịt ức gà luộc
- Trứng luộc
- Hoa quả tráng miệng (thay đổi theo mùa)



Thứ 4

- Cơm trắng, cơm gạo lứt
- Canh bí đỏ
- Bò xào đậu que
- Tôm rang
- Hoa quả tráng miệng (thay đổi theo mùa)



Thứ 5

- Cơm trắng, cơm gạo lứt
- Canh rau muống luộc
- Su su xào thịt băm
- Lạc rang
- Hoa quả tráng miệng (thay đổi theo mùa)



Thứ 6

- Cơm trắng, cơm gạo lứt
- Cá ngừ kho
- Thịt nướng
- Canh bí xanh
- Chè đậu đen



Thứ 7

- Cơm trắng, cơm gạo lứt
- Canh củ quả
- Muối vừng
- Thịt kho tàu
- 1 hộp sữa chua





Food source:

- ✓ From reputable gardeners, ensuring food hygiene and safety, requiring imported vegetables, tubers and fruits to be always fresh; Snacks such as yogurt, nuts are plentiful, diverse, affordable. All food sold in the canteen must have clear origin, full expiry date, guaranteed certification from reputable institutions. Always focus on quality instead of quantity.
- ✓ The canteen gives priority to importing locally available vegetables and fruits, which people grow themselves in cooperatives such as vegetables, spinach, morning glory, cabbage, kohlrabi, carrots. These cooperatives grow according to VietGap standards, where seeds, microbiological fertilizers, labels, product packaging and quality control of vegetable samples are guaranteed.
- ✓ Quality control: quality checks using the quality assurance are done every day management staff at all stages from imported inputs, to preliminary processing, processing, packaging, and delivery

5.4. Human resources:

- ✓ Each canteen at the school includes: general manager (manager of food sources in the canteen), cashier, service staff, chef. The number of staff depends on the size and number of students at the school.
- ✓ The canteen will encourage schoolchildren and students (of working age) to be part-time employees to help them pay for their tuition and living expenses.

Marketing and communication plan:

- ✓ Communication on social networks will promote the school canteen through tools such as facebook, tiktok, instargram (fanpage, confession groups, school clubs)
- ✓ In the canteen area we will print, hang and stick propaganda slogans and drawings on healthy and balanced nutrition. The aim is to propagate and change the awareness and behavior of students, including school staff, to create healthy eating habits.
- ✓ The canteen will organize "exchange" sessions (plastic bottles, books, clothes, school supplies... used but still of good quality) on the last 2 days of each quarter to receive discounts/goods/free gift when buying items in the canteen.
- ✓ We will build a network of students in the school to share information, experiences and improve nutrition through clubs, groups, confessions; and support communication sessions by giving talks on nutrition topics, seminars and workshops on health, highlighting nutritional deficiencies in adolescence and young adulthood, providing solutions, through which to advertise and introduce the canteen
- ✓ Once a year, a contest "canteen poster design" is held for students in schools, in order to encourage students' creativity and understanding of the benefits of using friendly canteens. Winners of the best works will receive a voucher/VIP card with attractive incentives (specifically, the contest plan will be deployed depending on the actual testing process).
- ✓ The special humanistic feature of the canteen is to use all the items at the quarterly exchanges to donate and support to charities in the area to contribute a small part of the kindness to the people living in difficult circumstances with a low standard of living. Thereby receiving support in the form of communication (consultation on nutrition awareness, expanding the form of friendly canteens to other schools) in remote areas from local charities.

Contents of nutrition communication and marketing:

- Disseminate healthy products on school canteens in the area.
- Expand communication and propaganda of beneficial drinks (soy milk, nut milk, fresh juice) instead of soft drinks and carbonated water.
- Open events to promote health and the influence of foods on the audience's age development. Expand the fruit juice model instead of carbonated drinks and soft drinks.
- Promote the benefits of products in the canteen:
 - □ Nut milks (such as soybean, corn kernels, almonds, walnuts, lotus seeds...) are homemade by the chef of the canteen, with 100% natural extracts rich in nutrients, nut milk brings. It gives the body many great benefits (cancer prevention, cardiovascular support, blood clotting, sugar control, skin nourishment and regeneration). Research results of Dr. Nguyen Hong Phuong and colleagues show that consuming a lot of tofu and soy products can provide a lot of calcium, supplementing the nutritional deficiencies of adolescents. student student.
 - □ Animal milk (cow's milk, goat's milk) are an abundant source of calcium, protein, B vitamins, vitamin D and many other minerals good for the human body such as potassium, magnesium, phosphorus, etc. Milk from animals can play an important role in human growth and development from childhood to adulthood, and are one of the most used foods in the world.
 - Yogurt: provides up to 49% of the body's daily calcium needs, is high in vitamin B12, vitamin D promotes bone health and the immune system, reduces the risk of several diseases, including heart disease and depression.
 - Juices; smoothies from fresh vegetables, tubers, and fruits (watermelon, orange, apple, pear, guava, celery, carrot, mix flavors...) Fresh fruit smoothie juices change the menu seasonally, giving priority to different types. Fruits, vegetables and tubers are abundant in the locality. Fruit and vegetable juices and smoothies are both nutritious and effective refreshments, providing many essential vitamins and minerals to supplement nutrition, strengthen the immune system, help beautiful skin, keep fit and healthy. prevent many diseases.

- Grains, snacks from seeds, cereals: Whole grain brown rice snacks contain abundant nutrients and essential minerals, helping to eliminate hunger in the afternoon effectively and at the same time provide the body. There are many reasonable energy sources, not redundant.

PILOT: CIRCLE BILLION ESTATE

Analysis and evaluation of the locations for investment

- ✓ Pilot location: Luong Ngoc Quyen High School, Hoang Van Thu ward, Thai Nguyen city. The number of students is about 2000 students/year, the teachers - staffs in the school are about 200 people.
- ✓ Area: 50 - 80m² in the campus of the school.
- ✓ Rental cost: expected from 30 - 60 million VND/year (can work in the form of bidding at the school)
- ✓ Advantages
 - The campus location in the school is convenient, easy to reach students
 - Stable security
 - The canteen construction solution is highly sustainable, because the customers are students.
- ✓ Weaknesses
 - The canteen often serves breaks, and these hours are often crowded and easily congested.
 - It is necessary to have the consent to participate and cooperate with the School. Schools and educational institutions in the province can only implement them when they are permitted by competent authorities in accordance with law.
 - The area depends on the conditions of the school.

Tools and resources needed

Funding:

- ✓ Design: 10,000,000 VND
- ✓ Cost of repair and decoration: 30,000,000 VND
- ✓ Marketing: 2,000,000 VND

Equipment

- ✓ Bar table: order area, payment, main map (4,000,000-5,000,000 VND)
- ✓ Computer: other device, cashier, information management (may or may not): 20,000,000 VND
- ✓ Refrigerator, insulation cabinet: preserving raw materials (5,500,000 - 10,000,000 VND)
- ✓ Stone basin, sink, pump: dispensing (3,000,000 VND)
- ✓ Presses, grinders: (5,000,000 VND)
- ✓ Paper cups, straws, trays, paper boxes: (500,000 VND)
- ✓ Tables and chairs (1,000,000 - 2,000,000 VND/set x 15 sets), ceiling fans (700,000/pcs x 5 pieces), tree fans (300,000 VND/piece x 5 pieces)
- ✓ Iron price, wooden shelf, glass cabinet...: (10,000,000-20,000,000 VND)
- ✓ Consumables: Cleaning tools (towels, washing water, ...): (2,000,000 VND/month)
- ✓ Fire protection equipment: 10,000,000 VND

Raw materials:

Depending on the consumption volume, we expect to import materials for the value of 50,000,000 - 100,000,000 VND/month

- ✓ Fruits: orange, pineapple, apple, guava, pear, carrot, watermelon...
- ✓ Milk of all kinds, nuts (walnuts, soybeans, soybeans, black beans ...)
- ✓ Wheat flour, vermicelli, pho, meat, spices...
- ✓ Ice...

Human resources, salary

- ✓ Depending on the number of customers to calculate the appropriate number of employees. Expected :
 - Manager: (1 person) x 8,000,000 VND/month
 - Cashier: (1-2 people) x 6,000,000 VND/month
 - Barista, chef: (1-2 people) x 10,000,000 VND/month
 - Service: (2 people) x 5,000,000 VND/month
- ✓ We can hire students/students to work part-time/hourly in the canteen (20,000 VND/1 hour)

Total estimated capital: 200,000,000 - 250,000,000 VND.

Stakeholders and Their Roles

- Developing solutions: research group of group 6 in Quan Trieu ward, the contribution of nutrition experts
- Our project is looking forward to the approval of State agencies such as the National Institute of Nutrition, the Ministry of Education and Training to deploy in all high schools and universities, as a project. to improve nutritional resources for adolescents, schoolchildren and students.
- High schools and universities in Thai Nguyen province (pilot at Luong Ngoc Quyen high school): cooperative unit
- Business license unit: carry out procedures for granting a business license
- Food hygiene and safety certification unit: carry out procedures for issuing food hygiene and safety certificates
- Suppliers of clean food: Vinamilk, TH true dairy companies, VietGap farms... provide standard inputs.
- Media organizations: television stations, newspapers, etc. to communicate about the project
- Economic sponsors: initial funding support
- Clubs, volunteer groups, confessions in schools: propagandize and educate students on food safety and hygiene, propaganda and promotion about the canteen.

With a rather short preparation time, our project cannot avoid shortcomings, we look forward to the comments of the Jury. With a spirit of serious work, we hope this project will be implemented and brought to fruition.

EXAMPLE PICTURES OF CANA DESIGN



APPENDIX

List of high schools in TN . city

- 1 Dao Duy Tu High School, Hoang Van Thu Ward, Thai Nguyen City
- 2 Thai Nguyen Gifted High School, Quang Trung Ward, Thai Nguyen City
- 3 Luong Ngoc Quyen High School, Hoang Van Thu Ward, Thai Nguyen City
- 4 Ngo Quyen High School, Thinh Dan Ward, Thai Nguyen City
- 5 Iron and Steel High School, Trung Thanh Ward, Thai Nguyen City
- 6 Chu Van An High School, Huong Son Ward, Thai Nguyen City
- 7 Duong Tu Minh High School, Quang Vinh Ward, Thai Nguyen City
- 8 PT. Thai Nguyen Rural Area, Tan Lap Ward, Thai Nguyen City
- 9 Thai Nguyen High School, Quang Trung Ward, Thai Nguyen City
- 10 Le Quy Don High School, Gia Sang Ward, Thai Nguyen City

List of Universities in TPTN

1. University of Information and Communication Technology - Thai Nguyen
University Road Z115, Quyet Thang Commune, Thai Nguyen City, Thai Nguyen Province
2. College of Economics and Business Administration - Thai Nguyen University
Tan Thinh Ward, Thai Nguyen City
3. School of Foreign Languages - Thai Nguyen University
Quyet Thang Commune - City. Thai Nguyen - Thai Nguyen Province
4. College of Industrial Engineering - Thai Nguyen University
No. 666, 3/2 street, Tich Luong ward
5. University of Agriculture and Forestry - Thai Nguyen University
Quyet Thang Commune - Thai Nguyen City - Thai Nguyen Province
6. School of International Faculty - Thai Nguyen University
Tan Thinh Ward - Thai Nguyen
7. University of Education - Thai Nguyen University
No. 20, Luong Ngoc Quyen Street, Thai Nguyen City
8. College of Medicine - Thai Nguyen University
No. 284, Luong Ngoc Quyen Street, Thai Nguyen City.
9. College of Science - Thai Nguyen University
Tan Thinh Ward, City. Thai Nguyen, Thai Nguyen Province
10. Viet Bac University
National Highway 1B, Dong Bam, Thai Nguyen

V3: A WEBSITE OF INFORMATION ON CALCIUM AND RECIPES FOR CALCIUM-RICH DISHES (#4)

Team members

Bui Thi Hong: 18, loves to cook, listen to music, read books.

Hoang Thu Giang: 17, student, likes music, cooking, reading books and social networks

Tran Khanh Linh: 17, student, likes to listen to music, read books.

Hoang Thi Hai Yen: 19, student, likes to listen to music, meet friends.

Nguyen Thi Thuy: 17, student, likes to listen to music, watch movies, draw.

Instructor:

Tran Thi Huyen Trang

Background

The obsession of that school day was when hearing the announcement of a medical examination. A physical examination means that we will have a general examination of the whole body. But the peak fear for students is measuring height. With a belief that the measure is wrong by 1cm, the number seems small but it is a big ambition for male friends, just like with 1m59 or 1m60 in the group of female friends, only 1cm apart but already different looks from the sides. If you can't understand that feeling, it's like getting an average score of 6.4 or 7.9, 0.1 apart but enough to break us down physically and mentally.

Adolescence is the basic period for building a skeleton. Starting from puberty until late adolescence, bones grow the fastest. Besides, calcium participates in the activities of protein, lipid, glucid metabolic enzymes; If lacking, these processes are hampered, affecting the absorption, metabolism of other nutrients. Calcium also participates in cells to release acetylcholine, norephenephine, participates in the activity of the hypothalamus, pituitary gland, promotes the release of cortical hormones, to ensure the transmission of information between nerve cells and between neurons and other cells, if calcium is lacking, the learning process, Thinking is also impaired, affecting academic performance. Some diseases when calcium deficiency in adulthood will not be revealed, but set the stage for that manifestation in middle age and old age such as osteoporosis, high blood pressure,... Therefore, calcium supplementation in adolescents plays a very important role.

A TUMP/NYAS study on the diet of adolescent girls conducted in Thai Nguyen province in 2021 showed that of the more than 1000 adolescent girls who participated in the study, only 30.6% of girls consumed milk and dairy foods daily, The group of nuts such as sesame seeds, cashews, almonds also accounted for only 13.3%. The amount of calcium provided from meals during the day only reaches 80% of the body's needs. Thus, calcium deficiency at this age is quite alarming.

Currently, with the development of information technology, many applications are being used by the community, including Tik tok with coverage throughout Asia as well as the world, with the number of users up to several hundred million users/day. Tik Tok is also the most downloaded app with an estimated 50 million video downloads. Realizing that approaching social networks to disseminate young people's knowledge and understanding about calcium can bring effective communication, our team, after discussing and agreeing, chose the method of communication

through Tik Tok network, to bring young people as well as those who often participate in using this social network can have easy access to information regarding the Calcium nutrient.

Objectives

We established a tiktok website to convey information, knowledge, update calcium-rich foods, calcium-poor foods, introduce easy-to-find, easy-to-enrich calcium foods for adolescent girls. With videos that are not long, but enough to bring the necessary amount of knowledge, and have a little humor and wit will attract many views from social network users

Time and place

The solution will be deployed on the Tiktok application from 8-2022 – 10-2022

Beneficiaries

This solution, if implemented, will help convey a lot of useful information and knowledge about proper nutrition to not only adolescent women but also those who often join the social networking site Tiktok.

Activities

The team conducted group discussions to come up with ideas for making the videos. Together build scenarios to combine with the found images to produce impressive videos, with a short length but still ensure to cover enough ideas about what to aim for in a video. We created a Tik Tok page at the following link:

https://www.tiktok.com/@gd_canxi_208qttn?_t=8W4j0wzhq66&_r=1&fbclid=IwAR2IZuSb89AxHXr_2nphnBmzuGSFZ4PgB5BKDQsnDv-F_ev4DThX9OKNYZw

< Gđ_canxi_208qtnn (@gd_canxi_... ...



Gđ_canxi_208qtnn

Hãy tham gia cùng tôi trên TikTok!

Mở ứng dụng

Gđ_canxi_208qtnn

@gd_canxi_208qtnn

31
Follower

0
Đang Follow

115
Thích

Follow

Vui vẻ _ Hoà đồng _ thông tin về Canxi



Image 1. The Tik tok website posted the video

Besides, noticing that adolescence is the beginning of defining and reinforcing preferred diets, snacking habits and fast food consumption are quite common at this age. Therefore, the research team has explored and tested some easy-to-make dishes that bring a lot of nutritional value in calcium. Through many experiments, the group decided to introduce to social network users,

especially young people and adolescents two dishes that are easy to make, popular and bring a lot of nutritional value: Chia seed orange drink and black sesame sweet potato cake.

- **Chia seed orange juice:** Chia seeds have no smell, no taste, so they can be combined with any food. Chia seeds mixed with orange juice are very nutritious. Drinking chia seed orange juice every day, helps boost vitamins A, C to help the body stay healthy. Antioxidants contained in chia seeds help the body stay youthful, preventing diseases. The content of ascorbic acid in chia seed orange juice is high, which has the effect of cell repair, body restoration and effective anti-aging. And most importantly, minerals in orange juice reduce and prevent symptoms related to calcium deficiency, the calcium content in chia seeds is 5.4 times higher than raw milk.



Image 2. Chia seed orange juice made by the team

- **Black sesame sweet potato cake:** Potato cake is one of the favorite dishes of many people who have the habit of snacking in their spare time. There are many ways to prepare potato cakes, and each has its own flavors, but overall they are delicious and very easy to make. With the goal of increasing calcium-rich foods, the research team chose to combine black sesame, a nutritious food, with sweet potatoes. According to the Vietnamese food composition table, in 100g of black sesame, up to 19% protein, 18% is glucid, 50% is lipid, especially calcium content up to 1257mg, in addition to containing many other

minerals. The processing of the cake is also very simple, just about 30 minutes you will have a very nutritious but super delicious meal..



Image 3. Ingredients for processing black sesame sweet potato



Image 4. Ingredients for making black sesame sweet potato (continued)



Image 5. Black sesame sweet potato cake made by the team

Tools and resources needed

To disseminate information as well as update information on the tiktok platform, it is necessary to have a computer, camera and phone

Ingredients for making chia seed orange juice: Orange, chia seeds, sugar

- Process:
 - Soak chia seeds in water for about 10 minutes
 - Perform orange squeezing, mixed with sugar and chia seeds
- Ingredients for making black yam cake:
 - Sweet potato, black sesame, tapioca flour, wheat flour, fresh milk without sugar, chicken eggs, butter, sugar, stencils, ice cream bags
- Process:
 - Steam the sweet potato then crush it. Add 50g of sugar and mix well.
 - Mix a mixture of wheat flour, tapioca flour, unsweetened milk, chicken eggs, butter, sweet potato mixture, sugar, black sesame. Knead until the flour and potatoes blend into a smooth plastic mass.
 - Dough after kneading, round or use an ice cream catcher bag to mold the cake.
 - Put in an air fryer and proceed to bake at a temperature of 140⁰C for 20 minutes

Community Mobilization

- Mobilizing the participation of adolescent girls, especially parents who often participate in using social networks to spread the tiktok page that we created.
- Mobilize community involvement to assist in scaling up the food communication and dissemination model prepared by the group

Monitoring and evaluating the effectiveness of the intervention

- Track visits, likes, and comments to uploaded videos
- With the desire for the 2 dishes to be well received and approached by the community, the group intends that if the promotion strategy on tiktok is successful with many comments, interactions, and if there is more time and money, the group will sell these two nutritious foods on the tiktok website

V4: MAKING BANANA CAKE AND SYDRAULIC MILK FROM LOCALLY AVAILABLE INGREDIENTS (#7)

Cau Da Group, Cao Ngan, Thai Nguyen city

Instructor: Mr. Hoa Thi Hong Hanh, TUMP



Background

Adolescence is an important period, and many factors contribute to health problems. Malnutrition in adolescent girls is a widespread problem worldwide. According to a study by the World Health Organization (WHO), the rate of iron deficiency anemia in adolescent girls in developing countries is 27%, in developed countries it is 6%. In addition to iron deficiency anemia, the prevalence of other micronutrient deficiencies in adolescent girls such as zinc, iodine, vitamins A, D, B1, B9 is also quite common. In Vietnam, according to the national survey report on micronutrients in 2014-2015, the rate of iron deficiency anemia in women is nearly 40%. Research conducted in Thai Nguyen in 2021 by Thai Nguyen University of Medicine and Pharmacy, Institute of Nutrition and The New York Academy of Sciences found a high prevalence of iron and calcium deficiency in adolescent girls. In the body, calcium is a mineral that plays a key role in homeostasis; without it, the nerves are susceptible to convulsions. Calcium makes up one-third of the mineral mass in the body and 99% is in bones and teeth. The physiological role of calcium is to build and maintain bone tissue and form teeth. Calcium is essential for the conversion of prothrombin to thrombin. Thrombin is an enzyme necessary for blood clotting. Calcium requirement of adolescent female subjects 3000 UL/day. The daily source of calcium from foods comes from milk and dairy products. However, the consumption rate of some rich food groups such as: beans 23.3%, and milk

30.6%, according to the results of the TUMP/NAS study. These are all food groups that are rich in micronutrients such as iron, zinc, calcium, and vitamin A for the body.

Objectives

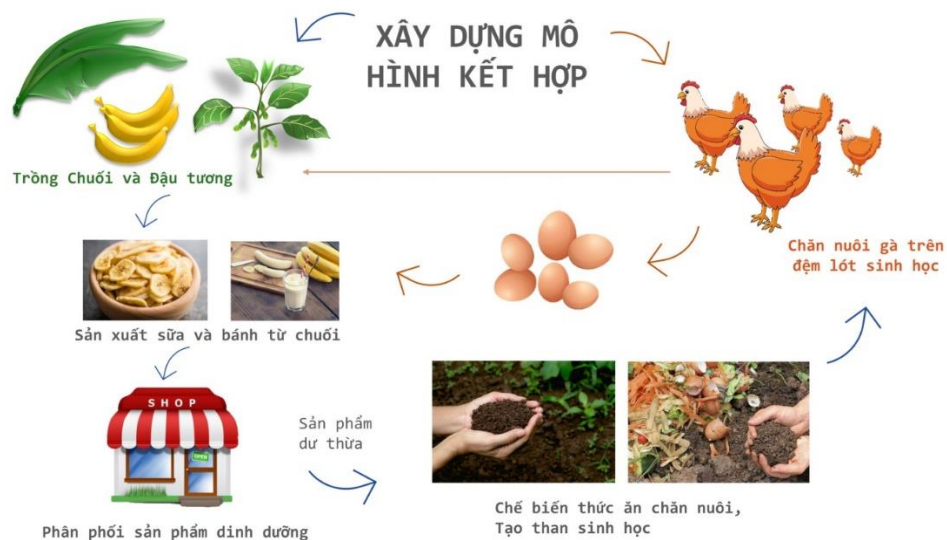
Economic and social context of Cao Ngan commune, Thai Nguyen city

Cao Ngan commune is located 6km from the center of Thai Nguyen city. Including 17 hamlets with a population of more than 8000 people, with the San Diu ethnic group accounting for 50% of the population. Cao Ngan is an agricultural commune, the main income of the people is from farming and animal husbandry. In recent years, Cao Ngan has focused on developing its agricultural economy by building banana, soybean and chicken farms to supply the city market as well as neighboring districts and provinces. Currently, the whole commune has about 13 chicken farms producing 8,000 chickens/year. Besides, almost every household has garden land to grow bananas and soybeans every year.

Based on the above analysis, the team found that promoting banana/soy milk consumption is a good strategy to improve micronutrient deficiencies for adolescent girls in particular and in the Cao Ngan commune in general. Our solution, “Building a cooperative model of producing banana bread and banana soy milk from locally available materials” has the following objectives

- *Objective 1: Build a cooperative model to produce banana cake and banana soy milk from available materials in Cao Ngan commune, Thai Nguyen city*
- *Objective 2: Contribute to the improvement of micronutrient deficiency in adolescents by promoting the consumption of the cooperative’s nutritional products.*

II. COOPERATIVE MODEL



- *Figure 1. Cooperative model of banana cake and banana soy milk production in Cau Da, Cao Ngan*

Activities

The cooperative has a development strategy consisting of two phases

- Phase 1: supply banana cake, banana soy milk to local adolescent girls with the goal of building a local branded banana soy milk product and attracting participation of households in the model.
- Phase 2: Mass production of banana cake, banana soy milk to supply to the market.

From those two stages, the cooperative develops the following main activities:

- Activity 1: Create a source of input materials to ensure availability and food safety and hygiene
 - Mobilize families with banana and soybean orchards to join cooperatives to provide raw materials.
 - Linking with local chicken farms to create a green production model and provide eggs for cake production (Figure 1).
- Activity 2: Production of banana cake and banana soy milk
 - Production of banana soy milk Step 1: Experimenting with banana soy milk production according to manual banana soy milk production process. The goal is to build a local brand banana soy milk formula from which it developed into an industrial production process.
- Phase 2: Producing banana soy milk using industrial machine lines

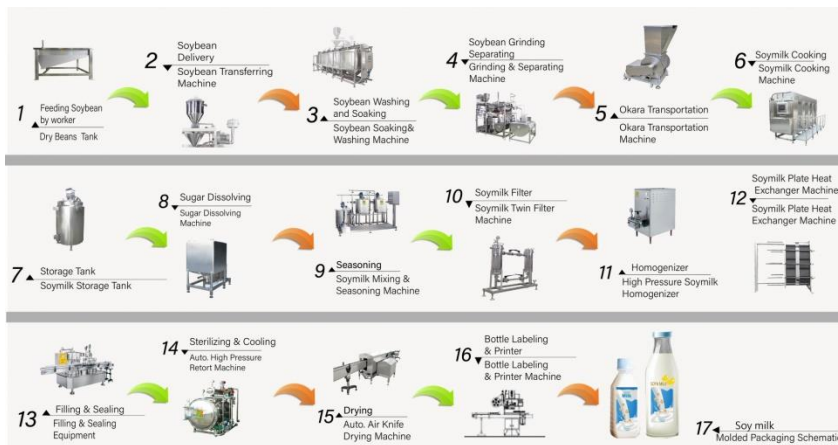


Figure 3: Banana soy milk production line (<https://www.vslfood.com/en/category/Dy-chuyn-sn-xut-sa-u-nnh/A0104.html>)

- Banana cake production Step 1: Experimenting with banana cake production according to the manual banana cake production process. The goal is to build a local brand banana soy milk formula from which to develop into an industrial production process
 - Step 2: Producing banana cake using industrial baking machine

Product distribution

- Phase 1, the production cooperative aims to supply banana soy milk for local adolescent girls in the commune.
- Phase 2, distributing banana soy milk to the market by
 - Linking with the school canteen and kitchen system to provide products for students in the school.
 - Linking with supermarkets; retail stores to distribute products.
 - The cooperative opens milk distribution shops and mobile vending carts to distribute products. The cooperative's activities are conducted on a closed and environmentally friendly model:

Tools and resources needed

- Use banana stem to make chicken feed
- Using banana stalks, soybean stalks, and leftovers during processing to make biological cushions for chicken farms.
- Using chicken manure as a microbial fertilizer to grow bananas and soybeans
- Use eggs to make banana cake
- Use banana leaves to wrap cakes

Cooperative participants

- Modeling team manages and coordinates activities of the cooperative
- Families with garden land can grow bananas and soybeans to supply raw materials
- Banana farms, chicken farms participate in product production
- Families with teenage girls participate in product distribution
- Teenage girls compose the Modeling team
- Once able to distribute products to the market, the cooperative invites more families with labor to participate in the milk and cake production process.

Nutritional products

- Banana Soy Milk
 - Ingredients: soybeans, bananas
 - Nutrition facts (*) (estimated in 1 bottle of 150 ml banana soy milk)

THÔNG TIN DINH DƯỠNG (NUTRITION FACTS)	
Thành phần dinh dưỡng	Trên 150 ml
Năng lượng (Energy)	99 kcal
Chất đạm (Protein)	1.24g
Carbohydrate	16.6g
Chất béo (Fat)	2.2g
Sắt (Iron)	1.4 mg

Vitamin A	35 mcg
Canxi (Calicium)	44 mg
Tỷ lệ hấp thụ	≈ 32%

*Source of Nutrition: <https://www.fatsecret.com/Default.aspx>

- Processing method (according to manual recipe)
 - Step 1: Prepare soybeans:
 - Soybeans are preliminarily processed by washing several times with water, then soaking overnight in water for 12-16 hours.
 - After soaking the seeds will expand evenly and stretch. Wash the beans with water, remove the dried shells from the seeds or damaged seeds
 - Step 2: Puree and filter soybean water
 - Add soybeans to about 1/3 of the height of the mortar each turn, then add water to 2/3 of the mortar. Close the lid and start grinding the soybeans with water until the mixture becomes smooth.
 - Next, filter the mixture through a sieve, using a spoon to gently stir the milk to help it flow through the sieve.
 - Step 3: Cook soy milk
 - Put the filtered water of beans into a large pot, then cook on very low heat until the milk boils, then add a little salt to add flavor. Continue cooking for another 30 minutes, then soy milk can be used
 - Step 4: Add chopped or pureed bananas into soy milk.
 - Can be used overnight in the refrigerator
 - Shelf life: 3 days from date of manufacture
 - Storage: Keep in a cool place
 - Cost (expected): 15,000 VND/bottle



Banana cake

- *Ingredients: baking powder, banana, soy milk, eggs.*
- *Nutritional composition (*) (Estimated per 100g of finished cake)*

Nutrition Facts	
Banana Muffin	
Serving Size: 1 medium (138g)	
Amount Per Serving	
Calories 366	Calories from Fat 104
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 6.9g	35%
Trans Fat 0.4g	
Polyunsaturated Fat 0.7g	
Monounsaturated Fat 3g	
Cholesterol 58mg	19%
Sodium 582mg	24%
Potassium 260mg	7%
Total Carbohydrates 63g	21%
Dietary Fiber 2.4g	10%
Sugars 32g	
Protein 5g	
Vitamin A	8%
Vitamin C	8.6%
Calcium	4.7%
Iron	10%

* Percent Daily Values are based on a 2000 calorie diet.

* Source of nutrition facts: <https://www.nutritionix.com/food/banana-muffin>

- Preparation
 - Step 1: make cake dough
 - Peel the banana, put it in a bowl, and mash it
 - Add to the bowl of banana 50g flour, 1 egg, 50ml milk and mix well
 - Step 2: Bake the cake (Use an oil-free fryer, oven, grill)
 - Shelf life: Use within 24 hours
 - Storage: Keep in a cool place
- Cost (expected): 3000 VND/piece



Product distribution

Main buyers: students (especially middle and high school teenage girls living in the area); parents with young children.

- **Product distribution**

- In the household: produced to provide nutritional products for family members
- Selling to the market: selling at school canteens, retail counters, supermarkets, mobile vending carts at local markets.

Beneficiaries

- Direct beneficiaries: Cau Da village families and their adolescent girls use bakery and dairy products from the model. Customers use the banana cake and banana soy milk products.
- Households living and working in the area obtain a stable income source and develop the economy.
- Farmers and workers inside and outside the area solve employment problems.

Advantages of the solution

- Relies on locally available resources: chicken, banana, soybean farm
- Environmentally friendly (planting trees, packing products with natural, recyclable packaging, using waste in the production process as bio-fertilizer) => Green production
- Creates products for immediate use
- Input materials are available all year round, fresh and affordable
- Low initial capital because it relies on available resources

Difficulties

- Output of the product: because the model is new, it takes more time for the product to be accepted by, and to reach the consumers.
- Replication of the model in other communities
 - To solve this, conduct research on consumer demand for banana bread and banana soymilk products. From there, elaborate a suitable development strategy

Marketing

- Disseminate on social networks: facebook, tiktok, instagram... so that the audience can easily access the product.
- Introduce products to schools, retail points, supermarkets...
- Making mobile vending carts
- Call investors, persuade people around to participate through farmers' associations, women's unions, media, radio...

Initial investment:

- support for starting materials: plant varieties, chicken breeds, labor costs, production costs, etc.

Mobilizing community participation

- Through the village farmers' association: mobilizing families with chicken, banana and soybean farms to participate in cooperatives in the production of raw materials
- Through the village women's association: mobilizing families with banana gardens and raising chickens to participate in self-production of nutritional products for family use. Especially families with teenage girls
- Contact schools, retailers, supermarkets: to distribute products
- Mobilize capital from investors: bringing the model of participation to raise capital in programs to provide capital for new projects (such as Shark Tank Vietnam); apply for capital support from the local small and medium enterprise investment fund.
- Through youth unions of schools to advertise products (integrated into nutritional counseling programs for adolescent girls held at schools)

Sustainability of the model

The model is capable of long-term maintenance because it is associated with local production activities, with small capital, and immediate products.

V5: Delicious Salad: Store providing all kinds of Salads (#8)



Group: Quan Trieu Ward

Group members:

Duong Thi Hien Luong: Student. Likes reading, watching movies, traveling

Nguyen Phuong Lam: Student. Likes going out, cooking

Dao Tung Chi- high: Student: Likes traveling, singing, dancing

Nguyen Phuong Chi: Student in High School. Likes listening to music, shopping

Nguyen Thu Thuy: Student in Economics. Likes listening to music, shopping, traveling

Instructor's name:

Ms: Bui Ngoc Diep – teacher at TUMP

Sister: Nguyen Tra My - student at TUMP

Sister: Pham Nhu Quynh - student at TUMP

Background:

Puberty-adolescence is the transitional period from childhood to adulthood. During puberty, young people develop rapidly both physically and mentally. This is also the age with the highest nutritional needs to support these physical changes. It is advisable to start building and strengthening a healthy, varied diet that provides essential nutrients for growth and later adulthood. Eating clean and safe foods will greatly support the development and maintenance of weight during this period. A safe and healthy diet can prevent overweight and obesity and reduce the risk of metabolic diseases later in life.

Today, however, the majority of teenage girls have an unbalanced diet and lack key nutrients. They often eat unhealthy or eat according to their preferences. This situation is alarming because research shows that stunted adolescent girls are at increased risk of developing into short women with low birth weight and consequentially giving birth to children with fetal undernutrition (with low birth weight).

A survey of over 1,000 adolescent girls in 12 communes and wards of Thai Nguyen province shows that local adolescent girls' diet often lack in calcium and iron. Most of the food groups they consume are starches (98.3%) and meat and fish (98.1%). Meanwhile, foods fortified with iron and calcium such as nuts (13.3%), milk and dairy products (30.6%), eggs (41%) have much lower consumption. compared to starch, meat and fish. Healthy vegetables, tubers and fruits all have a consumption below 70%. According to a study by the Harvard School of Public Health, a diet rich in vegetables and fruits will reduce the risk of high blood pressure, heart attack, stroke, many types of cancer and other metabolic diseases.

Salad (or mixed vegetables) is a dish from Europe. It includes various ingredients such as raw vegetables, salads, noodles, legumes, eggs, meat, seafood and fruits. They are a "natural medicine", being packed with antioxidants, vitamins and minerals essential for good health. They can be adjusted to taste and preferences, making them a versatile and enjoyable part of the diet. Overall, it's a healthy and convenient snack to boost your nutrient intake and improve overall health. There are many salad shops in the world, for example, Sweetgreen is the world's first salad startup valued at over 1 billion USD, with a chain of stores across the United States, selling affordable salads liked by young people. Operating with a "farm to fork" model, Sweetgreen now has the ambition to become "Starbucks in the salad world".

In Vietnam, in big cities like Ho Chi Minh City, Saigon, Da Nang, and Hanoi, there are delicious salad bars, which became famous culinary destinations and well-developed business. such as Eat More Salad in Saigon, WowBox Salad Saigon, Salad Station Saigon, The Salad Republic Hanoi, Gourmet Salad Hanoi, Salad Club Da Nang... But currently, there are no such stores in Thai Nguyen City. Therefore, we chose to build a salad shop called Delicious Salad in Thai Nguyen with ingredients such as vegetables, tubers and fruits that have high nutritional content, are grown locally, and are safe and hygienic.

Our criteria are that our salads should be delicious, clean, convenient and reasonably priced. The store will apply the self-sufficient hydroponic vegetable growing method to ensure the source of fresh green ingredients and inputs. The salad will be built by customers from a variety of ingredients. The store's special sauce promises to attract a large number of customers. Our salads will focus on adding 2 nutrients, iron and calcium, to the diet, those lacking in the diet of teenage girls in Thai Nguyen province in particular and all customers in general in the province.

The problem

Clean food provides all the necessary nutrients to meet human needs and are safe for the human digestive system, the ecosystem and the environment. Using clean foods limits the risk of diseases from foods of unknown market origin. Such features highlight the advantages and safety of using clean food. Faced with the risks associated with food hygiene and safety, people are often concerned about their health and are looking to improve diets. Also, eating a healthy diet to improve health, physique and skin has become a popular trend on the internet and social networks. In a recent report on the motivation to promote healthy eating habits in Vietnam by Younet Media, up to 31% of people said that it would help improve their overall quality of life.

The growing trend of using healthy products, across many countries, has attracted many new businesses that provide users with quality products, are committed to health safety and generate profits. Recent research by Nguyen Hong Phuong et al., shows that adolescent girls in Thai Nguyen province consume more animal protein than plant-based protein. Our salad shop will focus on using plant-based proteins such as: nuts, beans, sesame, peanuts, etc., combined with vegetables, tubers and fruits, helping to diversify their diets.

Objectives:

Establish a chain of Delicious Salad stores, specializing in providing nutritious salads, especially to help teenage girls use clean and healthy dishes, and improve the intake of important nutrients such as protein, iron and calcium.

Short-term goal:

By 2022, build an efficient store, and generate 20% of the capital invested in Year 1.

Long-term goals:

Building chain stores

Improve the snacking habits of adolescents with nutritious foods to improve their nutrition

Time and place:

The solution will be deployed in Thai Nguyen city, from October 2022 to October 2024

Beneficiaries:

Teenage girls participating in the solution will be provided with nutritional information and experience the store's nutritious dishes. Busy people with limited time still have nutritious meals to ensure their health and that of their families, especially in iron, calcium, vitamins, etc.

Activities and implementation methods:

Store name: Delicious salad

Slogan: Enjoy food your way!

Delicious Salad's motto is to create simple dishes, from seasonal and healthy foods.

Business products:

The store's special menu focuses on two nutrients, calcium and iron. The following salads provide plenty of calcium:

- Fruit salad: Apple, strawberry, blueberry, lemon, orange, grape, cantaloupe.
- Russian Salad: Apple, Potato, Carrot, Corn, Chicken Breast, Egg, Peas
- Seafood salad: Celery, yellow bell pepper, tomato, green onion, shrimp, squid, scallop, extra virgin olive oil, yellow lemon, salt, black pepper.

The following ingredients provide plenty of iron:

- Vinegar salad: Lettuce, tomato (or cherry tomato), onion, cucumber, red bell pepper, garlic, chili sauce, rice vinegar, cooking oil.
- Spinach Salad: Spinach, Cucumber, Almond, Lemon, Onion, Strawberry, Chicken Breast.
- Caviar Salad: Crab stick, caviar (or salmon roe), white cabbage, purple cabbage, Mayonnaise.



Features offered

- Sell in store a variety of salads that contain fresh vegetables grown locally/imported fresh from the farm, and prepare them using healthy and convenient food recipes

- Prepare take home salads, pre-mixing and packing ingredients and sauces based on customer requirements.
- Customers can choose the ingredients (vegetables, tubers, nuts, fruits, fish and meat) in the store or online to create salads to their preferences.
- The store applies a strict and comprehensive quality management system, ensuring safety and hygiene from the input of raw materials to the delivery of products to users.

Tools and resources needed

- Vegetables, tubers, seeds and fruits: lettuce, lettuce, cabbage, grape seaweed, spinach, cherry tomato, large tomato, cucumber, carrot, potato, vegetable sprouts, water spinach sprouts, corn, raisins, black sesame, white sesame, groundnut, green bell pepper, red bell pepper, celery, cumin, coriander, laksa leaves, mint leaves, hot pepper, garlic, onion, ginger, red onion, passion fruit, apple, strawberry, grape, watermelon...
- Meat and fish ingredients: Tuna, Chicken eggs, Shrimp, Scallops, Squid, Sea crab meat, Chicken breast, Smoked ham, pork, beef, salmon...
- Special sauces that customers can choose according to their taste. Seasoning ingredients include sugar, vinegar, pink salt, pepper, seasoning, mustard.



- To create a unique taste for its salad products: the shop uses European standard sauces that meet the needs of foreign customers and suit the taste of Vietnamese people. Sauce ingredients include mayonnaise sauce, extra virgin olive oil, sesame oil, Korean chili sauce, miso paste, sesame oil, roasted sesame sauce.



In the context of fierce market competition, the store needs make a difference on the products themselves, and in perfecting the processing, production, delivery, and customer service processes, so it can develop its business model in the future.

Deployment



Bảng hiệu:



Opening hours: 08:00 - 21:00

Price ranges: 40,000 - 150,000 VND

Communication and promotion

Run ads on facebook/ instagram/ twitter/ tiktok

Trial sales in supermarkets.

10% off for customers who bring their family's containers to buy salads.

Slogan: Enjoy food your way!

Motto: simple dishes, from seasonal and healthy foods.

Logo (see above)

Organization of production

Delicious Salad will apply a strict and comprehensive quality management system, ensuring safety and hygiene at each stage in the process of product supply and processing. All people in direct contact with food (including raw materials or other finished products), with food contact surfaces, and packaging materials must strictly observe the following hygiene regulations:

- Ensure hygiene before starting work.

- Wear clean gown, hair hood, mask, gloves, apron.
- Comply with regulations when using cleaning facilities,
- Keep clothes and personal belongings outside of work areas.
- Use recyclable paper boxes, recyclable eating utensils, large salad dishes, scissors, spoons, chopsticks, tongs, food wrap.
- Use eco-friendly packaging, salad boxes, paper packaging, glass jars. If using glass jars, the jar will be withdrawn and refunded 2k each for the next order.

Human resources:

- Managers, chefs, accountants, waiters, delivery staff,
- Trained home delivery team.
- Nutrition consulting team for customers with training.
- The team runs ads, takes care of customers, takes orders on online sales systems.

About the hydroponic vegetable growing system

Growing plants in hydroponic solution is a technique to grow plants without soil, directly in nutrient medium or media that can be sand, rice husk, coir husk, peat. Hydroponic vegetables have the big advantage of being "clean", as they are grown in an aquatic environment that avoids putting them in contact with sandy soil and are less affected by external environmental factors. This helps the vegetables to be cleaner, without taking too much time to soak before using and may even be eaten right after harvesting. The store will build its own farm to grow hydroponic vegetables with a net house system, with technical consulting from Thai Nguyen University of Agriculture and Forestry. This will be the store's main source of inputs.



Stakeholders and their roles

- Thai Nguyen University of Medicine and Pharmacy (TUMP) Department of Nutrition and Food Safety and Hygiene is the cooperation unit of the nutrition project, supporting the provision of information and knowledge on nutrition, food safety and hygiene.
- Thai Nguyen University of Agriculture and Forestry: a unit that supports and advises on growing hydroponic vegetables.
- Local hydroponic clean vegetable farms: cooperate to provide quality safe vegetable raw materials.

- Schools, clubs, adolescent girls develop solutions: propagandize for parents, caregivers, departments, unions and local people to be aware of the role of healthy eating for the community, especially teenage girls.

Inputs and budgets

Stores near the city center, chairs for customers to sit and wait, payment counters, cash payment software or transfer QR codes, warehouse management software and food supply, management software financial management, food storage refrigerator system, electric lighting system in the store, signs. The Budget includes the cost of renting a store, designing logos, signs, equipment needed in the store, online service software, food delivery tools, staff uniforms, training costs creating human resources and the cost of supplying food materials, the cost of building a hydroponic vegetable growing system. Investment capital: 250 - 300 million VND, including:

- Store costs
 - o Shop rental: 10-12 million VND
 - o Store design: 10 million VND
 - o Raw materials: 5 - 15 million/month depending on output
 - o Equipment investment costs: food storage refrigerators, food processing tools, chairs, counters, televisions, etc. 100 million VND
 - o Cost of hiring staff and chefs: VND 50 million
 - o Advertising cost: 5 million VND
 - o Other expenses: 10 million VND
- Building hydroponic vegetable growing system: 80 million VND
 - o Area: 100m² growing hydroponic vegetables, including
 - o The system of greenhouses - net houses (230,000 - 250,000 VND/m²)
 - o Automatic sun-cutting net system (100,000 - 110,000 VND/m²)
 - o Hydroponic rig system (24 rigs, 5 tubes each, 160 planting baskets (3,400,000-3,800,000/rig)
 - o Cooling convection fans (4 pcs/12 -15 million VND)
 - o Water supply system, storage tanks (5-10 million VND)
 - o Cost of seeds, growing medium, nutrition in the first crop (6-8 million VND)
 - o Seeds, nutrition, media... about 7-10 million/month.

Community Mobilization

- Nutrition seminars with the participation of students
- Youth volunteer propaganda.
- Monitor and evaluate the effectiveness of the solution:
- Change the diet from the group members themselves in daily life, have a clear concept of healthy eating, actively eat more green vegetables and fruits.
- Help the community understand and know the benefits of eating salad thanks to a diet rich in green vegetables and fruits in this dish: beautiful skin, better food digestion, avoiding the risk of diseases eyes, digestive tract, reduce the risk of heart attack, prevent cancer... and many other benefits.
- Built a store specializing in providing fresh and healthy salads to address the current needs of the community.
- Contribute to the provision of healthy diets for all, contribute to increasing consumer access to nutritious healthy foods, and create jobs and opportunities to increase income.

Strengths and limitations of the approach

- Strengths:
 - Expands the scope of communication.
 - Level of participation large, effective
- Weakness:
 - Can't force people who don't really care about their nutrition.

V6: Making and selling food from chicken eggs

Tan Cuong commune

(#8)

Group members

- Dao Thi Thuy Nhung
- Khuat Thi Kim Chi
- Nguyen Thi Linh Chi
- Pham Thi Hoai Ngoc

Instructor: Hua Thi Diem

Support: Hoang Thi Phuong, Lo Van Tan

Background:

Adolescents have a high need for nutrients such as iron, calcium, zinc, protein, vitamins, etc., but the reality shows that in general, teenage girls consume less than the recommended amount. The desire to keep their figure, or stress due to work or study are the causes of teenage girls having unreasonable diet and poor nutrition. The New York Academy of Sciences in collaboration with the University of Medicine and Pharmacy - Thai Nguyen University conducted a study on food and nutrient consumption in adolescent girls in Thai Nguyen city. That research shows that the consumption of some nutrient-rich foods is low. Only 23% of the adolescent girls in the study consumed legumes, 24% consumed vitamin A-rich vegetables and fruits, and 13.3% consumed nuts. The study results also indicates that the prevalence of iron and calcium deficiency is a prominent nutritional problem in that group.

Eggs have many nutritious components. Protein in egg yolk is a type of phosphorus protein, with the best and most comprehensive amino acid composition. In addition, chicken eggs are a valuable source of lecithin. Foods from eggs help promote brain, eye, bone and nail health. Increasing egg consumption could reduce calcium and iron deficiency in adolescent females. In the area of Tan Cuong commune, many households raise chickens, but few (40%) adolescent girls consume it. Maybe because they do not like to eat eggs or find egg dishes boring? A solution we thus propose is to process and supply dishes made from eggs, using abundant local production to contribute in reducing iron and calcium deficiency in adolescent girls. Currently, there are no shops in Tan Cuong commune to process and provide food from eggs but we believe that a variety and novelty of egg dishes will appeal to teenage girls in particular and the community in general.

Goal:

Set up a store to prepare and distribute healthy egg dishes.

Time, place:

Tan Cuong commune from October 2022 to June 2023

Beneficiaries:

Families and adolescent girls with limited income will have access to and consume this nutritious food source at a reasonable price. The adolescent female participants will also benefit directly from the development and implementation of this solution. They will be provided with information about a healthy, nutritious diet. They will also be taught how to prepare a variety of foods from eggs. They will increase their consumption of foods that are not only rich in calcium and protein but also contain many other important nutrients such as iron and zinc, etc., improving nutritional status and health. The implementation of this solution will also contribute to economic benefits for local households and improved nutrition in the community.

Activities and Implementation

- Set up the location: rent a house of about 30 m² near the school, near the market, near the center of the commune
- Obtain equipment: product billboards, desktop computers, blenders, ovens, kitchen tools (knives, cutting boards, scrapers, bowls, plates), gloves, aprons, counters, refrigerators, trays, electronic scales, product packaging.
- Apply for a business license from Thai Nguyen City People's Committee.
- Apply for a certificate of food safety and hygiene from the branch of food safety and hygiene.
- Source the raw materials: There are many households and chicken farms in the locality, so we take advantage of the available raw materials here. Learn from the commune farmers' association about the households with chicken farms, the households raising chickens. Choosing a long-term, reputable and quality raw material supply source.

Staffing: mainly the team members, who consult with some professional people.

Preparation

- Processing and supplying egg dishes with stable quality and affordable price.
- Producing standard food based on the assessment of the food hygiene and safety party.
- Egg-based products: low-sugar sponge cake, muffins, salted egg with chicken nuggets without preservatives, egg tart, flan, bread egg clamps; and some drinks like egg coffee, egg cocoa

Recipes

- Muffins and sponge cake: healthy flour, low-sugar milk and eggs as the main ingredient. This is suitable to people with diabetes, obesity, who lack nutrients, etc.
- Egg oil sauce: made from eggs, providing protein as well as increasing the attractiveness of breakfast dishes.
- Egg tarts: chicken eggs, fresh milk without sugar, low sweet sugar,
- Egg sandwich: bread eggs, spices

Packaging: use environmentally friendly boxes/bags such as paper bags, paper boxes made from recycled paper.

Communication and product promotion:

- Organize free product trials at schools and universities in the area.
- Use social networks such as facebook, tiktok, youtube, zalo,
- Distribute leaflets
- Market products combined with information about balanced eating in daily diets in meetings of youth unions, student-student unions tablets

Distribution:

- Selling directly at the store,
- Selling through take-away and home delivery,
- Supplying schools, shops, supermarkets.

Stakeholders and their roles

- The project organization board provides funding to implement the idea
- Local government: Apply for a business license to open a shop,
- Food Safety Department: Certificate of food safety and hygiene
- Households provide raw materials for product processing, participate in product testing and consumption.
- Youth union, women's union, schools: the place to promote and use the product, and at the same time contribute ideas to improve the product.

Tools and resources needed

- Ingredients:
 - For drinks (egg coffee, egg cocoa):
 - Eggs, coffee, cocoa, bread, vanilla, milk, sugar, flavoured green tea
 - For sponge cake: flan cake, cream cake, doraemon donut, macaron cake
 - Eggs, cooking oil, vanilla, fresh milk (condensed unsweetened), lemon juice, flour, salt, sugar, baking powder, cornstarch, honey, red beans, raisins, kernel powder, strawberry jam, blueberry, white chocolate (black), food coloring, cocoa powder, green tea powder, strawberry syrup, turmeric essence
 - Store in a cool, dry, clean place.
- Tools:
 - toaster, whisk, measuring scale, large bowl or mixing bowl, non-stick baking sheet, cake decoration, foam maker, packaging, cake cabinet, straws, plastic cups , glass cups, containers, display shelves, all kinds of boxes, bags for guests to take away, ...
- Equipment: cashier desk, computer, receipt printer
- Funding: about 130,000,000 VND
 - 15 million/6 months for space rent
 - 80 million for buying equipment,
 - 10 million for advertising,

- 25 million for raw materials

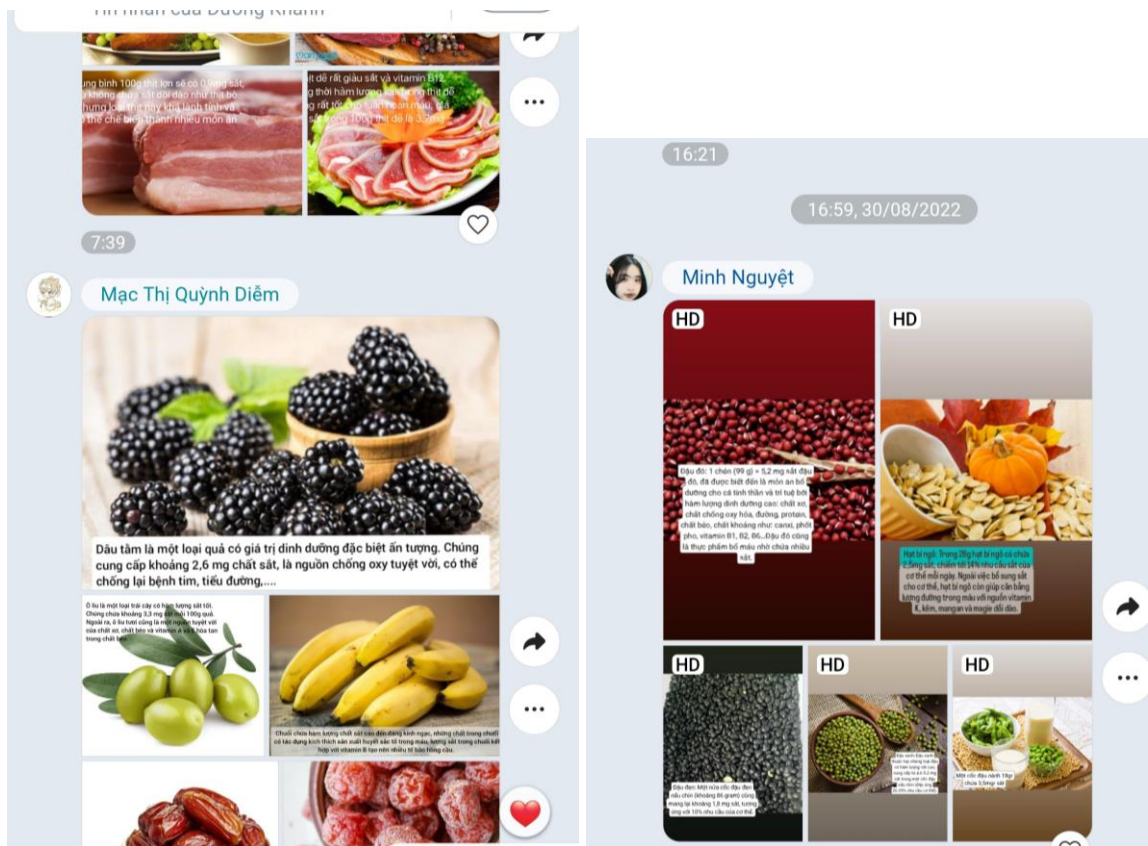
Community mobilization

- Farms, people and households provide eggs and chicken meat.
- Mobilize everyone to participate in the experience and contribute product ideas
- Cooperate with organizations such as Youth Union, schools to participate in communication about nutritional balance and introduce products.
- Contact school canteens, local supermarkets, shops to promote and sell products

Monitoring and evaluation

- Monthly sales tracking
- Polling of product users (by quick interview or short questionnaire)
- Assess knowledge, attitudes, and practices of group members in food selection and consumption
- Assess knowledge, attitude and practice of adolescent girls in the ward after experiencing and being taught about balanced diets.

V7. "Supplying iron for the body every day: what Guava can do" (#10)



Group members:

- Tu Thi Minh Nguyệt - 16 years old
- Mạc Thị Diễm - 18 years old
- Tu Thi Thanh Loan - 19 years old
- Hoàng Hải Yến – 17 years old
- Mạc Thị Nguyệt – 17 years old

Instructor's name: Tran Thi Huyen Trang

Background:

Iron plays a very important role in the body, together with protein to form hemoglobin, transport O₂ and CO₂, prevent anemia and participate in the composition of redox enzymes. As adolescents (especially girls) develop, their bodies have an increased need for iron. And this can be achieved by a diet rich in high biological value iron. However, in some developing countries such as Vietnam, the accessibility to animal sources of high biological value iron is very low, and the daily ration consists mainly of food sources. plant origin, so the risk of iron deficiency is high. Moreover, people of this age are not interested, and do not know much about iron and how to balance the amount of iron used.

In Thai Nguyen province, TN University of Medicine and Pharmacy and the Center for International Cooperation on Training and Research conducted a study to collect and analyze the dietary intake of adolescent girls in 12 wards/communes of Thai Nguyen province. and show the status of the nutritional problem of adolescents with iron. We as a Group plan to establish a media information page about Iron to share useful information about this nutrient to young people in Linh Son. At the same time, following the popularity of Linh Son guava, we conducted a trial of guava juice and communicated with local people about the benefits of guava juice, a food rich in vitamin C and which helps in better iron absorption.

Aim:

Help young people get necessary information about the importance of iron and take advantage of the popularity of Linh Son guava (a nutrient-rich food that enhances iron absorption) to introduce ways to prepare it.

Objectives:

Set up a Page "Supplying Iron for the Body Every Day" to provide information on daily iron intake for teenagers to help improve iron absorption and make guava juice to help strengthen it. Promote products that help absorb iron, rich in vitamin C

Time and place:

The solution was implemented on Facebook from August 2022 to September 2022.

Beneficiaries:

- Adolescent female participating in the study directly benefited from the development and implementation of this solution. They were provided with information about a proper and nutritious diet and with information about foods and foods that bring iron to the body, in addition to foods that help maximize iron absorption. By increasing the consumption of foods that are not only rich in iron but also contain many other important nutrients such as calcium, protein and many other nutrients, we will improve nutritional status and health.
- Using the advantages of the social network Facebook, which is used by the majority of young people as well as the community, we target teenagers in general and social network users in particular. People who regularly use Facebook will access the information we put on the fanpage and will be able to learn about iron. We hope to initially share information with a list of friends of study participants, then to spread more widely by having that list of friends share information about useful articles on their wall or group pages.

Activities and Implementation Methods

The solution consists of two main parts:

- Social media: Design strategies, advertise products, use social media tools like Facebook.
 - We create a Page on how to supply iron for the body every day, and every week the group meets, to discuss, find more information and upload new articles, good articles, useful information about iron benefits to the fanpage. Actively share articles on personal pages and group pages to spread the word to more people about the group's page.

o <https://www.facebook.com/profile.php?id=100084484706716>



- Introduce foods from Guava: Many types of guava are being planted. This is a fruit rich in vitamin C, a nutrient that helps strengthen and absorb iron for the body. We really want to spread to as many people as possible the nutritional value of Guava and introduce it as a locally available healthy food to everyone. In addition to eating guava directly, we found that many other dishes from guava can be processed and prepared, such as guava yogurt, smoothies guava, aloe vera guava juice. So, in addition to posting informational articles about iron on the group's fanpage, we also posted information about dishes related to Guava to introduce it to the online community.

Stakeholders and their roles

- Families, schools, classrooms, teachers are the places where we will provide more knowledge and make useful articles known.
- Prestigious social networking sites such as the Information page of the Institute of Nutrition, vimec, will help us update knowledge to implement the posted content.

Tools and resources needed

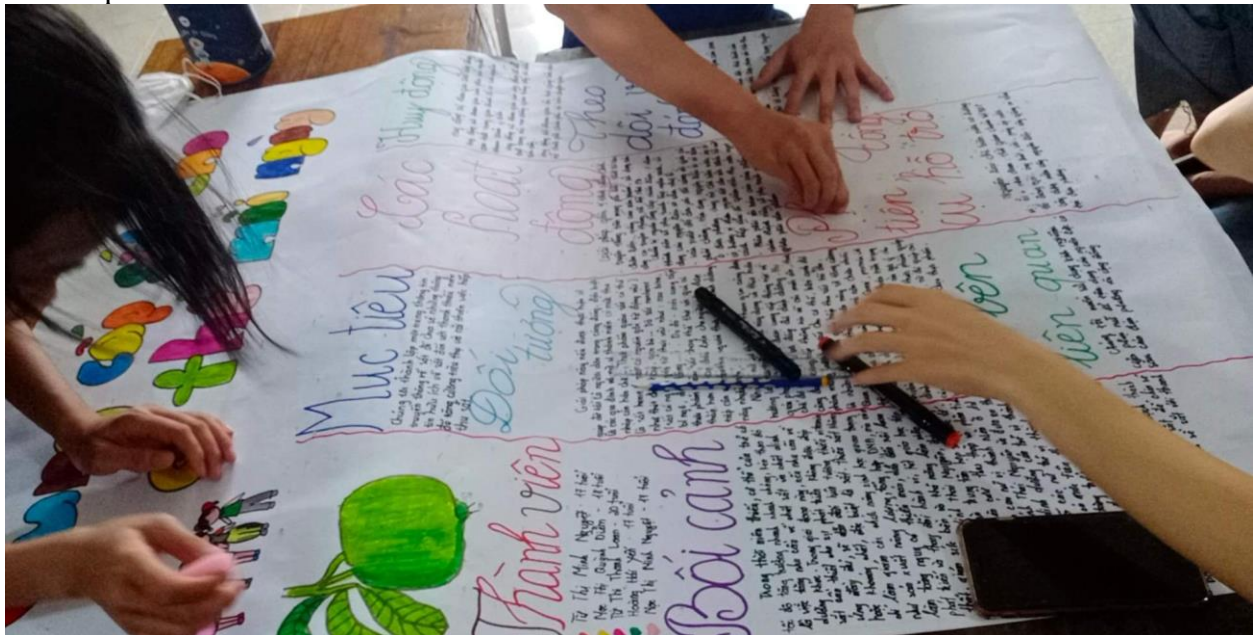
- Most of the information is uploaded to the fanpage, so to operate we need a computer, a product camera, and a network.
- Raw materials for processing guava juice: Using locally available Guava.

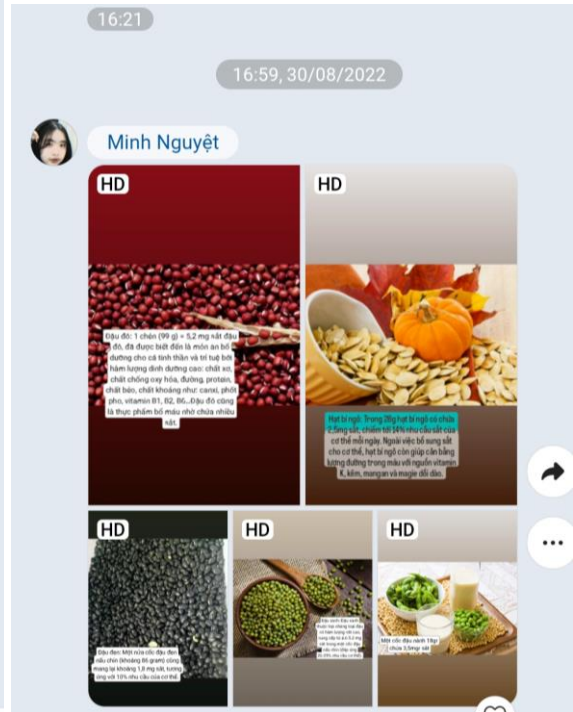
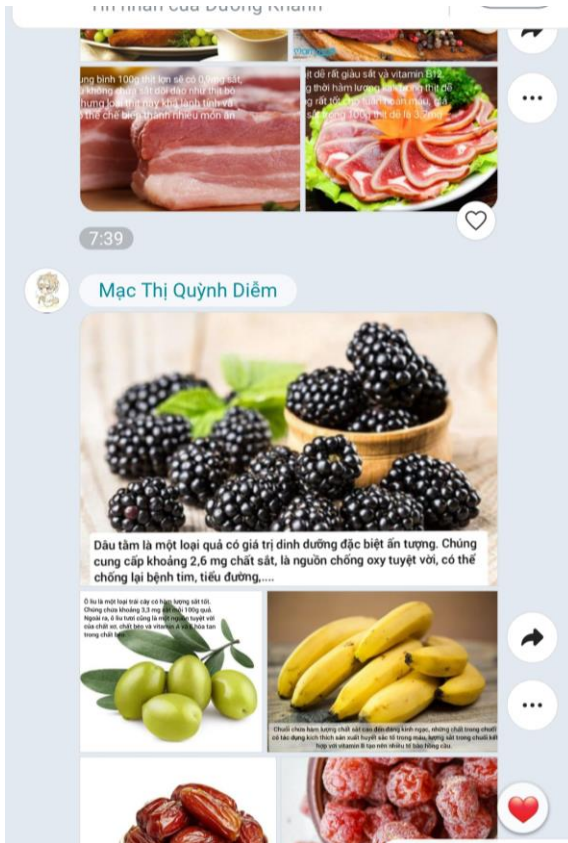
Community mobilization

- Mobilize the participation of the community: friends, brothers and sisters... Share the information of the fanpage on personal and group pages.
- If possible, we want to replicate the communication model, introduce the fanpage website in meetings held in villages, or at class activities.

Monitoring and evaluation

- Tracking based on interactions, comments on facebook: evaluate effectiveness based on the number of likes, shares, and comments (see below).
- Assess knowledge, attitudes, and practices of group members in food selection and consumption





Tracking the use of the media page on facebook we got the following results:

- There are 29 people who like the page and 30 who follow the page

- There are 96 people accessing the page and about 53 interactions with it

Khám phá i

 Số người tiếp cận bài viết	96
 Lượt thích Trang mới	15
 Người theo dõi mới của Trang	15
 Lượt truy cập Trang	44

Lượt tương tác i

 Lượt tương tác với bài viết	53	+18%
 Cảm xúc	33	+38%
 Bình luận	0	0%
 Lượt chia sẻ	2	+100%
 Lượt click vào liên kết	1	0%
 Lượt xem ảnh	1	0%



V8: Nutrition education and communication to improve the diet of adolescent girls (#7)

Group members

- Dang Thu Trang - Group 2 - Cam Gia ward
- Nguyen Thi Uyen - Group 7 - Cam Gia Ward
- Cao Thu Hoa - Group 2 - Orange Gia
- Dao Phuong Lien - Group 2 - Cam Gia
- Hoang Thi Khanh Diem - Group 7 - Cam Gia

Instructor's name

- Dr. Truong Thi Thuy Duong
- SV. Nguyen Minh Quang
- SV. Pham Quang Hung

Background

At each stage of human development, nutritional needs are fundamentally different. Responding appropriately to those needs is always a matter of concern. This is even more important for adolescents. This is the transition period between preschool, elementary school and adulthood. Currently, Vietnam is suffering from a double burden of nutrition. The prevalence of undernutrition remains high while overweight and obesity tend to increase in adolescence. According to the survey results of the study "Integrating technology and nutrition for adolescent girls: Occupational factors and local solutions" conducted in Thai Nguyen in 2021, the diet of adolescent girls is not sufficiently diversified, consuming less nutritious foods such as eggs, milk, beans, some foods rich in vitamin A, iron, calcium... In addition, the use of fast food, carbonated drinks, sweets, are consumed relatively frequently. Nutrition education communication has an important role in controlling unhealthy eating habits. Nutrition education communication is a highly effective, long-term solution to a problem that affects many people in the community. For adolescent girls, the combination of direct communication at school and communication through social networks will be the most effective in improving diet, contributing to ensuring optimal nutrition, reducing consequences related to undernutrition and overnutrition.

Solution

Nutrition education communication to improve diets at schools and through social media (facebook, tiktok...) stressing the benefits of adding nutrients (Protein, fat, starch, sugar, etc.) vitamins, minerals) in commonly available, locally available foods.

Objectives

- Organize 20 live communication sessions on nutrition and diet at 20 middle schools, high schools and university colleges in Thai Nguyen city.
- Create an account on a social network (Facebook, instagram, or tiktok) to provide articles, videos, and photos with nutritional and dietary education content.
- Improve knowledge among adolescents for improving nutritional status by making the most of nutritional resources from locally available food.
- Improve the dietary intake in adolescent girls.

- Improve nutritional status, health, disease prevention in adolescent girls.

Time, place

- Time: November 2022 to November 2023
- Location: Schools (Level 2, High School, University) in Cam Gia Ward and other wards in Thai Nguyen City area

Beneficiaries:

- Adolescent girls in Thai Nguyen city.
- People in the community.

Activities and Implementation

- Activity 1: Communicate nutrition education to improve the diets of adolescent girls in schools
 - Target audience: Students in the school, especially teenage girls, school leaders, parents (Those who directly influence teenage girls).
 - Communication content: The content is built based on different topics (Different food diets, diets full of nutrients, balanced diets in adolescent girls...).
 - Communication locations: Schools (secondary school, high school, university) in Cam Gia ward and other wards in Thai Nguyen city area.
 - Communication method:
 - Talk on topics about nutrition and diets.
 - Organize small contests to improve the knowledge and practice of subjects who are encouraged to apply nutrition education through nutrition education.
 - Design leaflets and distribute leaflets to those who are informed about proper nutrition.
 - Human resources: nutritionists, local health officials, schools, volunteers, local departments and mass organizations
- Activity 2: Communicating to improve the diet of adolescent girls through social networking sites
 - Set up accounts on social networking sites Facebook, instagram, tiktok.
 - Post articles with content on proper nutrition, nutritious food sources, processing methods (Steaming, boiling, simmering, stewing, limiting frying, frying, grilling...). The content can be presented with images, videos or articles... Information is censored before posting.
 - The activity includes 2-3 participants to ensure the account works effectively and helps the viewers.

Stakeholders and their roles

- Sponsor: Financial support, human resources, supporting products for nutrition education communication sessions.

- Reporters: Back to the media and propaganda sessions on mass media channels (Newspapers, internet, television...) so that more people can access and collect information.
- Schools: Participate in propaganda and integrate the contents of reasonable nutrition in adolescents into extracurricular activities and class activities.
- Health authorities: Provide complete and accurate information on proper nutrition and related issues.
- Local people: support human resources and facilities for nutrition education and communication sessions in the community.

Tools and resources needed

- Location: Schools (Level 2, High School, University) in Cam Gia ward and other wards in Thai Nguyen city area.
- Using available electronic devices such as loudspeakers, mics, projectors, leaflets on proper nutrition in adolescents.
- Budget from donors to carry out nutrition education communication at a reasonable and feasible cost.

Community mobilization

- Select adolescent girls and people living in the same place, ward, or school.
- Mobilize the participation from the community (Nutrition experts, local health workers, volunteers, local departments, mass organizations...).

Monitoring and evaluation

- Number of communication sessions conducted, number of attendees.
- Number of people accessing information pages on social networks, interacting.
- Assess the change in knowledge and practice after the intervention.
- Assess nutritional status of adolescent girls by BMI (Based on weight and height).

V9: Nutritious meatballs: (#1)

Group 1, Hoang Van Thu ward, Thai Nguyen city

Group members

1. Dong Thao Phuong
2. Do Thi Anh Thu
3. Hoang Thi Phuong Thao
4. Ninh Nguyen Hai Giang
5. Vu Nguyet Ha

Instructor: Hua Thi Diem

Support: Hoang Thi Phuong, Lo Van Tan

Background:

Nutrition during adolescence, especially in women, is very important, because this age group has a very rapid growth rate in both height and weight, there are changes in psychology, biology, physiological, endocrine etc. Along with the high demand for nutrition, this age group also begins to form and consolidate its preferred diet. In fact, in general, adolescent girls tend to consume less food than the recommended amount because girls are afraid of being fat and want to keep in shape but some do not really understand nutrition, or don't care about nutritional balance. Research conducted by TUMP/NYAS with the National Institute of Nutrition and the Thai Nguyen City Medical Center in 2021 shows that many teenage women have an unbalanced diet. The consumption rate of foods rich in calcium and iron is low (about 40%).

Solution

Our team wishes to provide a dish rich in nutrition, one that is easy to prepare, that can take advantage of ingredients available in Thai Nguyen city and that is attractive to teenage girls; Our team came up with the idea of “Processing and supplying nutritious meatballs”. Meatballs are not unknown locally, but vegetable/chicken meatballs are rare in the market. In addition to vegetable/chicken meatballs, we also process and supply other meatballs made from freshwater fish (perch, carp, carp...) and vegetables. The combination of chicken and vegetables creates a diversity in nutritional composition. This is the new point of our idea.

Objectives:

- Processing and selling meatballs made of chicken/fish and vegetables.
- Conveying the message of nutritional balance in the daily diet to adolescent girls in particular and the community in general.
- Expected time from October 2022 to June 2023

Beneficiaries:

Local adolescent girls in particular and people in the community in general will have a new nutritionally balanced and diverse selection of dishes. Meatball dishes made from white meat (chicken/fish) and vegetables will help people replace processed meatballs of unknown origin and unclear nutritional value. This will help adolescent girls and their families have a balanced nutrition. The implementation of this solution will also bring economic benefits to the operators.

Adolescent girls participating in this program will learn and know more about the nutritional value of foods, thereby building a suitable diet for themselves to improve nutrition and self care.

Activities and Implementation

- Location: In group 1, Hoang Van Thu ward, Thai Nguyen city
- Facilities and equipment: product billboards, desktop computers, stoves, blenders, steamers, vacuum cleaners for packaging, kitchen tools (knives, cutting boards) , scraper, bowls, plates, gloves, aprons..), counters, refrigerators, sinks, baskets, trays, electronic scales, product packaging...
- Ingredients: locally available ingredients that are easy to buy and can be found in shops and markets: white meat (chicken, fish), beans, eggs, tofu, green vegetables...
- Permits: apply for a business license from the People's Committee of Thai Nguyen city, and a certificate of food safety from the food safety department of Thai Nguyen city.
- Preparation:
 - Ingredients: Chicken (breast), tofu, eggs, carrots, peas, oatmeal/wheat flour, corn, onion, shiitake. Spices: Seasoning seeds, fish sauce, honey, five-spice powder, oyster sauce, ground pepper, salt, soup powder, main noodles, etc.
 - Method 1: Ingredients for chicken
 - Chicken breast: puree or minced
 - Tofu: crushed
 - Carrots, peas, beans, corn, onions: chopped/shredded
 - Add eggs and oatmeal/wheat flour and necessary seasonings and mix well until the mixture thickens.
 - Leave for 20 minutes for the mixture to infuse the spices
 - Shape the mixture into bite-sized balls
 - Put the water in the steamer, after the water boils, reduce the heat (for a steamer or an induction cooker), put the tray where the meatballs were placed in the steamer, close the lid.
 - Remove the meatballs from the steamer after 7-10 minutes.
 - Processing method 2: Fish ingredients
 - Fish meat (tilapia): boneless and pureed
 - Minced dill, ground lemongrass, ground pepper
 - Carrots, peas, corn, shiitake, onions: chopped/shredded
 - Add eggs and oatmeal/wheat flour and necessary seasonings and mix well until the mixture thickens.
 - Leave for 20 minutes for the mixture to infuse the spices
 - Shape the mixture into bite-sized balls
 - Put the water in the steamer, after the water boils, reduce the heat (for a steamer or an induction cooker), put the meatballs tray in the steamer, then close the lid.
 - Remove the meatballs from the steamer after 7-10 minutes.

Packaging and pricing:

- The packaging label is designed by the team, the product bag is a silver 1-sided zip bag.
- Price: 30,000 VND/bag of 250g, 50,000 VND/bag of 450g

Communication and product promotion:

- Organize free product trials at schools and universities in the city.
- Post on social networking sites such as facebook, zalo, tiktok, youtube,
- Distribute leaflets in meetings of youth unions, student-student associations marketing products combined with propaganda of balanced eating in daily diets

Product distribution:

Products are sold locally, delivered and distributed to school canteens, local stores and supermarkets.

Stakeholders and their roles

- The project organization board provides funding to implement the idea
- Need support from local authorities (such as Ward People's Committee, City People's Committee, Sub-Department of Food Safety) to license the appropriate papers.
- The participation and support of organizations such as Youth Union, Women's Union, School... to promote and use the product, and at the same time contribute ideas to improve the product.
- Food distributors (stores, supermarkets) contribute to the consumption of products

Needed resources

- Means and supporting tools: facilities, equipment and materials mentioned above
- Budget: Estimated 120 million VND (Including 20 million/6 months for renting the place, buying equipment 70 million, advertising 10 million, raw materials 20 million)

Community Mobilization

- Mobilize people and organizations such as the Youth Union, Women's Union, schools... (with priority given to teenage girls) to try the product.
- Mobilize the participation and help of sponsors and food distributors (cantins, supermarkets, shops).

Monitoring and evaluation

- Monthly sales tracking
- Polling of product users (by quick interviews or short questionnaires)
- Assess knowledge, attitudes, and practices (KAP) of group members in food selection and consumption
- Assessing KAP of adolescent girls in the ward after experiencing and being consulted on diet balance.

V10: Increasing the consumption of foods rich in Calcium and vitamin A in young females (#2)

Team members' names:

Ta Thuy Ha - Group 2 - Tuc Duyen Ward
Bui Phuong Thao - Group 3 - Tuc Duyen Ward
Vu Thi Le Quyen - Group 8 - Tuc Duyen Ward
Nguyen Huong Ly - Group 11 - Tuc Duyen Ward
Nguyen Ngoc Linh Chi - Group 11 - Tuc Duyen Ward

Instructors Name:

TS. Truong Thi Thuy Duong
SV. Nguyen Minh Quang
SV. Pham Quang Hung

Background

Nutrients in the diet are important in the growth and development of the body. Adolescence is a very important transition period in terms of psychophysiology and nutrition, preparing for the full development of the body, perfection of organs and functions. Lack or overnutrition will affect health potential, brain development and thinking. Ages 17 to 22 are in late adolescence, which is the last stage of height development in life, thus also the final stage to improve nutritional status.

Vitamin A and calcium deficiency is very common among Vietnamese adolescent females and one of the main causes of this condition is poor diet. The results a TUMP/NYAS study conducted in Thai Nguyen in 2021 showed that only 24.1% of adolescent girls use foods rich in vitamin A, and about 45% of the study subjects consumed calcium-rich foods. Therefore, it is extremely important and necessary to come up with solutions to enhance and add food sources rich in calcium and vitamin A into the daily diet of adolescent women.

Solution

- On social networking forums such as Zalo, Facebook, Instagram, etc. post nutrition education media articles that promote foods rich in vitamin A and calcium in the diet of adolescent girls
- Organize extracurricular hours on the topic of proper nutrition in the learning environment and localities.
- Produce, process and distribute sample foods in quantities sufficient to supply the market.

Objectives

- Raise awareness of the importance of vitamin A and calcium in adolescent female diets.
- Increase the consumption of foods rich in vitamin A and calcium in adolescent females.
- Mobilize community participation in activities to support the improvement of nutrition for adolescent girls.

Operation and implementation

a. Post articles on social networking applications; integrate short (15-30sec) promotional videos about the importance of vitamin A and calcium into videos on YouTube, Facebook using electronic devices such as computers, phones ... Coordinate with famous YouTubers and Streamers to insert promotional videos into channel owners' videos.
Producer: Members from Tuc Duyen ward - Thai Nguyen city.

Advertising rental budget: 5.000.000 VND

b. Organize communication of nutrition education for students in Thai Nguyen schools. Organize this once every 6 months or once a year with the participation of schools, adolescent female students, donors and nutritionists (at least 1 person). To make the nutrition education communication session more rich and unique, we will add games such as asking and answering nutrition questions, if answered, there will be rewards such as a food related to the content of the nutrition session that day. From there, we can see the level of knowledge about nutrition of students and super students. Based on the level of knowledge, we can look to develop more useful information for these adolescent girls. Foods rich in vitamin A and calcium can be used for baking, processing into fast food or dry food (For example: Mango cake, gac cake, dried carrot, dried mango ...). These foods and ingredients come from farms, farms or people growing and raising their own livestock to reduce the cost of buying raw materials as much as possible. The authors guide processing and making yogurt from ingredients rich in vitamin A and calcium such as watermelon juice, mango, condensed milk ... integrated in the nutrition education communication session.

Time and place

- When:
 - Media organizations: From November 2022 to November 2023.
 - Food processing: November 2022 and maintaining thereafter.
- Where:
 - Nutrition education communication organization: Cultural house, school ...
 - Food processing: At restaurants, school canteens ...

Beneficiaries

- Adolescent female. Applying some interventions on proper nutrition in adolescent girls will help this age group actively take care of and monitor their nutritional health.
- People in the community will understand more about the role and importance of vitamin A and calcium.

Stakeholders and their roles

- Sponsors: provide funding, human resources, supporting products for activities.
 - Schools: create lists and facilitate female adolescent participation.
 - Distributor: support, investment, distribution cooperation to create activities such as 2 buy get 1 free.
 - Production company: directly cooperate and implement activities.
 - Restaurant: Innovate the menu to match the nutritional goal of adding foods rich in Vitamin A and Calcium daily to contribute to diversifying foods in meals.
- Local people: support human resource cooperation to create the best and safe ingredients and food for users.

Tools and resources needed

- Location:
 - + Nutrition education communication organization: Cultural house, school ...

- + Food processing: At restaurants, school canteens ...
- Use available equipment such as radio speakers, mics, projectors, nutrition leaflets with the theme of fortifying foods rich in vitamin A and calcium in daily diets to support nutrition education communication sessions.
- Budgets from partners and donors to implement nutrition programs at a sufficient cost, take advantage of available tools to save funds to organize nutrition education communication and prepare dishes rich in vitamin A and calcium, design nutrition leaflets.

Community mobilization

- Select adolescent girls in the same place, ward, commune, school to participate in direct nutrition education communication to improve the diet of the target audience.
- Mobilize the participation of groups and forums of adolescent women who participated earlier.
- Mobilize the participation of health workers, mass organizations in participating in specific activities such as nutrition education communication, food processing and distribution, etc.

Monitoring and evaluation

- Based on the results of the survey of adolescent women's diets after nutrition education has been communicated.
- The strength of the group is that there is 1 nutritionist to get the best guidance and suggestions.
- Assess the nutritional status of adolescent females using BMI (based on weight and height).