

Café Niugini

films the extraordinary food cultures and cuisines of Papua New Guinea. This 11-episode educational video series hosted by Jennifer Baing takes viewers on a unique culinary journey experiencing the land of more than 1000 tribes and healthy food recipes!

- ★ **Western Highlands** episode invites you to watch a traditional earth oven family feast and local chicken 'uye' mushroom delicacy in Mt. Hagen town.
- ★ **Eastern Highlands** episode celebrates an elaborate food initiation ceremony and reveals bamboo cooking traditions of the Gororave and Kafe tribes.
- ★ **Markham Valley** episode focuses on the coconut cream clay pot delicacies of Jennifer's community as we experience a thanksgiving ceremony for her elders.
- ★ **Madang** episode takes us to volcanic Kar Kar Island to make galip nut fudge, taste sago asparagus rolls and experience the mangrove root drink ceremony of Madang Lagoon.
- ★ **Oro** episode celebrates the illustrious Ario dance-drama feast of the Binandere people and Jennifer tastes taro soup, sago porridge and savoury banana cake.
- ★ **East New Britain part - 1 & 2** episodes explore the natural health foods of Kokopo and Rabaul as Jennifer shows us the indigenous culinary styles of coconut 'Ku' dip, the famous 'Agir' hot stone cooking and nutritious wild fowl egg dishes.
- ★ **Bougainville** episode showcases a traditional mourning feast of Malasang village featuring earth oven cooking activities, taro-coconut lemon grass flavoured pudding and pig meat distribution.
- ★ **Finschhafen** episode Jennifer tastes fish and sago balls from Tami island and explores the bamboo cooking styles of the mountain village people.
- ★ the **Milne Bay part - 1 & 2** episodes reveal the many bush food remedies and wild greens of a nearby virgin forest. Slow cooked coconut and taro dishes are prepared and Jennifer explores the bountiful yam storage houses of Normanby Island.

Po Box 4714,
Lae, Morobe Province 411
Papua New Guinea
Phone: +675 7638 4813
E-mail: savepng@gmail.com



Approved for use by educational institutions and community organisations for non-commercial purposes only. All other rights reserved



An education resource to help Papua New Guineans understand indigenous food health



Dear Viewers,
Over one billion of the worlds' population are chronically **malnourished**. Today global diets have become **homogenised** and are causing serious nutritional imbalances This simplification of diets and nutritional debasement is challenging food policy planners and individuals globally.

Globally we are experiencing a rapid change in our food systems not just the food that is being consumed but the actual way in which the food is being produced. In the Pacific the food systems have been catastrophically transformed over the past 70 years and there is increasing concern over the lack of key micronutrients such as **iron, iodine, vitamin A, folic acid** and **zinc** from the diets of developing countries. This micronutrient deficiency is defined as the **"Hidden Hunger"** and it is this unseen hunger that is degrading the health of our region.

Cafe Niugini was produced to promote and preserve food culture in Papua New Guinea and Melanesia to ensure that we utilise our local food resources to improve our health by utilising fresh indigenous food grown and produced locally.

This resource guide was developed by Save PNG to create dialogue within our societies through focus groups, educational institutions, schools, churches NGOs and any other interest groups. We need to work together in preserving and promoting our local foods, improving nutrition in our communities and increasing local food security and sovereignty.

It is our pleasure to present to you Cafe Niugini, an 11-part series that explores the local food cultures of Papua New Guinea. We would like to acknowledge and thank God for his direction and wisdom, our sponsors, **The Christensen Fund, the United Nations Permanent Forum on Indigenous Issues, Australian Aid and City Pharmacy Limited Group** for believing in this project and the communities that we have worked in partnership with for their cooperation, support and hospitality.



Jennifer Baing-Waiko
Directors, Save PNG



Bao Waiko
Directors, Save PNG

And God said, "See, I have given every herb that yields seed which is on the face of the earth, and every tree whose fruits yield seed; to you it shall be food".
Genesis 1:29 (NKJV)

Did you know that the more Beta Carotene you eat the more equipped your body is to fight disease?

Did you know that sweet potato contains calcium?



A great healer called, Hypocrates once said, "Let food be your medicine and medicine be your food"



You are what you eat, so if we eat healthy food then we will be healthy...

What is Food Security?

The World Food and Agricultural Organisation (FAO) provides the following definition:

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2001).

1. What does food security mean to you?
2. Do you think that your country, community or where you live is food secure?
3. What can you do to improve your local food security?

Group Exercise:

Have the group debate on the issue of food security. One side to argue that the country is food secure and the opposing side to debate that the country is not food secure.

Key Fact:

Malnutrition is the single largest contributor to disease in the world.

International Food and Agricultural Organisation (FAO) 2014,: Gender and Nutrition, Key Facts. <http://www.fao.org/gender>



Vitamin	A (Provitamin A, Carotene)
	The orange-yellow pigment found in nature called carotene, is transformed in the body into vitamin A. Pre formed vitamin A can be found in fish liver oil, milk fat and eggs.
Function	This vitamin is essential for normal growth and development, normal tooth formation, proper functioning of the body, healthy skin and mucous membranes. It prevents the development of nutritional night blindness. It boosts and maintains the immune system and is essential for pregnant and breastfeeding mothers.
Valuable Sources	Pawpaw, avocados, broccoli, carrots, dark green vegetables (aibika, tulip (<i>Gnetum gneum</i>) Amaranth, Drumstick tree (<i>Moringa olifera</i>), fern leaves, watercress), green beans, sweet potato (kaukau), mango, pumpkin, tomatoes many other natural food that has pigment.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance by eating half a sweet potato, a medium carrot, or a handful of dark green leafy vegetables a day.
Results of Deficiency	<ul style="list-style-type: none"> • Retarded growth • Respiratory infections • Night blindness • Rough and dry skin

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24 hours or in the last week that contain beta carotene and share them with the class. Do you think that you have a diet high in beta carotene? If not then what do you think you can do to increase the amount in your families diet.

What is Food Sovereignty?

The Nyeleni Declaration (FAO) provides a definition source:

“Food sovereignty is the right of peoples to healthy culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.”

Declaration of the Forum for Food Sovereignty, Nyeleni, 2007.

Do you think that food sovereignty is important?

Do you think that your country or community is Food Sovereign?

How can you improve your local Food Sovereignty?

Group exercise:

Plant a school garden, community garden or individual garden based on local and indigenous food plants and medicines. Label the the food plants with scientific name and local language name. If there are people from different language groups label with the names of each language.

Key Fact:

Vulnerable women are at a greater risk of malnutrition, then men and more girls die from malnutrition than boys.

International Food and Agricultural Organisation (FAO) 2014,.: Gender and Nutrition, Key Facts. <http://www.fao.org/gender>

Vitamin	B1 (Thiamin)
	Widely distributed in nature
Function	This vitamin is essential for normal growth proper utilisation of sugars and starches, normal functioning of the nervous system, maintenance of the appetite and the normal tone and functioning of the digestive tract. It maintains a healthy nervous system, promotes appetite, normal pregnancy and breastmilk production.
Valuable Sources	Avocados, bananas, watermelon, pumpkin seeds, citrus fruits (oranges, lemons, pomelo), green leafy vegetables (aibika (<i>Abelmoschus manihot</i>), tulip, amaranth, drum stick tree (<i>Moringa olifera</i>), fern leaves, valangur (<i>Polyscias cumingiana</i>), watercress), beans, nuts (galip, peanuts, talis nut ect), milk, soy milk, wholemeal flour, brown rice, potatoes, liver (beef and chicken), eggs.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance from 100g of fish, 50g of nuts, 60g of pumpkin seeds. 100g of black beans.
Results of Deficiency	<ul style="list-style-type: none"> • Mild loss of appetite • Impaired digestion of sugars and starches • Constipation • Diarrhoea • Abnormally thin or weak

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24hours or in the last week that contain Thiamin and share them with the class. Do you think that you have a diet high in Thiamin? If not then what do you think you can do to increase the amount in your families diet?

What is Agrobiodiversity and why is it important?

The Convention on Biological Diversity' defines agrobiodiversity as all of the components of biological diversity relevant to food and agriculture, including agricultural ecosystems. It therefore encompasses the variety and variability of animals, plants and micro-organisms at the genetic, species and ecosystem levels that are necessary to sustain agricultural production.

Agrobiodiversity is the result of natural selection and human intervention over millennia, and has an essential role in sustainable development:

- For providing food, fibre, fuel, fodder (animal food), medicines and other products for subsistence or sale
- For sustaining ecosystem services such as watershed functions, nutrient cycling, soil health and pollination
- For enabling species and ecosystems to continue to evolve and adapt, including adaptation to climate change
- For supplying raw genetic material for breeding new varieties of plants and animals

Key Fact:

Modern agriculture is based on an increasingly small number of crops and animals. Half our energy intake from plants comes from only three species: wheat, rice and maize. In total, 90 percent of the energy and protein in our food comes from only 15 plant and 8 animal species.

Bioversity International, 2014. "Learning Agrobiodiversity: The importance of agricultural biodiversity and the role of universities". Rome, Italy.

Vitamin	B2 (Riboflavin) Found in a wide variety of plant and animal foods
Function	Essential for normal growth and development, it works together with other vitamin B complexes to utilise food energy. It is especially essential for the oxidation of the bodies cells. This vitamin is important for healthy and clear skin.
Valuable Sources	Bananas, citrus fruits (oranges, lemons, pomelo), milk, cheese, soy milk, eggs, tomatoes, seeds, nuts and whole grains.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance from a combination of bananas, pumpkin seeds, nuts, tomatoes, and oranges throughout the day. Half a cup of any of these foods eaten three times a day will give the right amount of vitamin B2.
Results of Deficiency	<ul style="list-style-type: none"> • Impaired growth • A state of mental or physical weariness a lack of energy • Fatigue • Pale lips • Rough red tongue • Headaches

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24hours or in the last week that contain Riboflavin and share them with the group. Do you think that you have a diet high in Riboflavin? If not then what do you think you can do to increase the amount in your families diet?

What is dietary diversity?

Dietary diversity is defined as the number of individual food items or food groups consumed over a given period of time. It can be measured at the household or individual level through use of a questionnaire. Most often it is measured by counting the number of food groups rather than food items consumed. **Ruel, MT. 2003.** Operationalising dietary diversity: A review of measurement issues and research priorities. *Journal of Nutrition*.

Make a food group list (fruits, nuts, staples, meat, fish etc.) together with your class and write a questionnaire to survey your class on what each individual has eaten over the last 24 hours.

Find out who has eaten the most diverse diet over the last 24 hours by adding up the total number of food groups the individual has eaten in the last 24 hours. Allocate one point per food group. You can also calculate the average dietary diversity of your group by adding up the total number of points for dietary diversity and dividing by the number of individuals in the group.

Food groups include: Cereals (corn, rice wheat and others, white roots tubers (potatoes, yam, white cassava), vitamin A rich vegetables (pumpkin, squash, sweet potato which are orange in inside), dark green leafy vegetables, other vegetables (eggplant, tomato and onion and others), vitamin A rich fruits (mango, pawpaw), other fruits (wild fruits), organ meat (liver, kidney, heart or blood based foods), flesh meats (beef, lamb, goat, chicken, duck or insects, eggs (from chicken, duck, guinea fowl or any other egg), fish and seafood, legumes, seeds and nuts, oils and fats, sweets, spices,

Key Fact:

Dependence on mostly staple foods and lack of crop diversity can contribute to malnutrition

International Food and Agricultural Organisation (FAO) 2014,: Gender and Nutrition, Key Facts. <http://www.fao.org/gender>

Vitamin	Folic Acid (Folate, folacin) Widely distributed in nature
Function	This vitamin is essential for red blood cell formation, body growth and reproduction of cells, utilisation of proteins and healthy brain function.
Valuable Sources	Avocados, broccoli, dark green leafy vegetables, beans, peanuts, nuts, whole grains (brown rice, wholemeal flour).
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance by including the food listed above in their daily meals. Avocado, brown rice and beans combined in a meal will provide a healthy and nutritious meal.
Results of Deficiency	<ul style="list-style-type: none">• Poor growth• Anemia• Intestinal disorders• Dizziness,• Fatigue

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24hours or in the last week that contain folic acid and share them with the class. Do you think that you have a diet high in folic acid? If not then what do you think you can do to increase the amount in your families diet?

What is the right to adequate food?

It is stated in the General Comment No. 12 in the **International Covenant on Economic, Social and Cultural Rights** (ICESCR), that every state is obligated to ensure for everyone under its jurisdiction access to the minimum essential food which is sufficient, nutritionally adequate and **safe** to ensure freedom from hunger. The right to adequate food is realised when every man, woman and child, alone or a community with others, has physical and economic access at all times to adequate food or means to be able to acquire it.

Nathan, Rose. 2008. Realising Children's rights to adequate nutrition, through national legislative reform. United Nations International Children's Emergency Fund.

Did you know that the National Government has a responsibility to ensure that everyone under its jurisdiction has a right to adequate food?

What can we do in our communities to ensure that every man, woman and child has access to food or the means to acquire it?

Key Fact:

Women in developing countries cultivate, purchase and prepare much of the food eaten by their families, but they often have limited access to information about nutrition.

International Food and Agricultural Organisation (FAO) 2014,: Gender and Nutrition, Key Facts. <http://www.fao.org/gender>

Vitamin	Zinc
	Abundant in red meat and legumes
Function	Zinc is an essential trace element in the human body. It is found in high concentrations in the red blood cells. It plays a vital role in, promoting many reactions relating to carbon dioxide metabolism. and the digestion of protein in the gastrointestinal tract.
Valuable Sources	Nuts and seeds (especially pumpkin seeds), beans, whole grain foods, peanuts and other legumes.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance eating brown rice, brown bread and whole grain products, peanuts, nuts and pumpkin seeds on a weekly basis.
Results of Deficiency	<ul style="list-style-type: none">• Stunted growth• Undeveloped genitals• Skin lesions• Diarrhoea• Increased susceptibility to infections• Night blindness• Reduced taste and sense of smell• Poor appetite• Hair loss• Slow wound healing• Low sperm count, and impotence.

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24hours or in the last week that contain zinc and share them with the class. Do you think that you have a diet high in zinc? If not then what do you think you can do to increase the amount in you or your families diet?

Hidden Hunger

Hidden hunger is defined as micronutrient (vitamin and mineral) deficiency in a person's diet. It is not malnutrition as it is commonly described, as a hungry or starving individual, but malnutrition is the **poor overall quality of nutrition**. Over 2 billion people suffer from this hidden hunger, they may eat enough food with energy to live, but have a diet poor in nutrients that fails to provide sufficient levels of essential vitamins and minerals that allow them to be mentally and physically healthy.

FAO publication, 2011, Combating Nutrient Deficiencies: Food-based Approaches.

Organise a taste test with your group. Steam 3 types of sweet potato, taro, banana, cassava or honey depending on what is available and label as sample 1, sample 2 and sample 3. Taste the different samples and rate between 1 and 5 with 5 being liked the most and 1 being disliked. Collect the ratings then add up the numbers of each sample. The sample with the highest score has the most acceptability in flavour.

Key Fact:

In many societies, men and boys are given priority when meals are served. This can contribute to undernutrition in women and girls.

Vitamin	Calcium
	1.5% of body weight of which 99% is in the bones.
Function	Important for the formation of strong bones and teeth. Helps to clot the blood, regulate heart beat, maintain mineral balance in all body tissues. Calcium, phosphorus and vitamin D also contribute to the strengthening of bones.
Valuable Sources	Nuts and seeds, beans, green leafy vegetables, sweet potato, milk and dairy products, pineapple, wholegrain foods, oranges, tofu and sunflower seeds.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance having a diet high in the foods listed above.
Results of Deficiency	<ul style="list-style-type: none">• Brittle bones and nails• Dental decay• Rickets a disease of children caused by vitamin D deficiency, characterised by imperfect calcification, softening, and distortion of the bones typically resulting in bow legs• Poor bone development• Excessive bleeding• Muscle cramps

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden.*

List the foods that you have eaten in the past 24hours or in the last week that contain calcium and share them with the class. Do you think that you have a diet high in calcium? If not then what do you think you can do to increase the amount in your families diet?

What is a traditional food system?

A **traditional food system** can be defined as a local food system that is currently being utilised or practiced by any ethnic group. Traditional food is food that you can access locally, without having to import, has been cultivated locally for a long period of time and is acknowledged as part of the knowledge systems of a society or culture. This includes the cultivation or harvesting from the natural environment.

Kuhnlein et al, D. (2009). *Indigenous Peoples' food systems: the many dimensions of culture, diversity and environment for nutrition and health*. Rome: Food and Agriculture Organization of the United Nations, Centre for Indigenous Peoples Nutrition and Environment.

Organise a tour of a local garden by one of the village elders or invite an elder who is knowledgeable in local traditional food systems to give a presentation to the group. You can also organise an elder from the community to teach the group how to cook a traditional dish with strictly local ingredients and local utensils such as clay pots, bamboo cooking, stone cooking or any other form of cooking that is specific to the culture.

Key Fact:

Many Pacific Island Countries are affected by the 'double burden' of high rates of malnutrition, coupled with high rates of overweight adults.

Grieve, et al. 2013. *Undernutrition in Pacific Island Countries: an issue requiring further attention*, Menzies School of Health, Australia

Vitamin	Iron
	The total amount of iron in the body is less than the weight of a coin, approximately 3 grams or .004% of the body composition.
Function	Iron helps to form haemoglobin, the red pigment of blood cells. It is vital for transporting oxygen to every body cell.
Valuable Sources	Beans, egg yolk, green leafy vegetables, molasses, sugar cane and red meats such as beef, lamb and goat.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance by ensuring that they eat a diet high in dark green leafy vegetables or seaweed if you live in a coastal area. Infants and children can be fed a mixture of sweet potato or pumpkin and egg yolk three times a week to ensure healthy amount of nutrients is in their diet.
Results of Deficiency	<ul style="list-style-type: none"> • Anemia • Pale complexion • Lowered vitality • Retarded development • Decreased red blood cells and haemoglobin

Source: Roslie Hurd, 2008. *Ten Talents: Natural foods- A diet from the garden of Eden*.

List the foods that you have eaten in the past 24 hours or in the last week that contain phosphorus and share them with the class. Do you think that you have a diet high in phosphorus? If not then what do you think you can do to increase the amount in your families diet?

Meal Planning Pointers

1. Make each meal tasty nourishing and attractive. If a meal does not look good we may decide in our minds that it will not taste good
2. Mix at least five different colours of food in the meal with different textures to create beautiful and nutritious meals. Ensure that the meals you eat have a high content of beta carotene as this will protect the body from diseases.
3. If you have a garden make sure that you plant a wide variety of fruits, vegetables and staple foods. Plant a nutritious garden and if you cannot buy lots of dark green leafy vegetable, plant a family garden close to the house.
4. Plan meals a week ahead, to save money on impulsive buying. Do not go shopping when you are hungry. Buy fresh fruits and vegetables in season
5. Eat lots of green leafy vegetables as they contain vitamins, A, B1,2,3, C, E, K, Folic acid, Calcium, Iron and Iodine.
6. Throughout the day, eat fruits with carbohydrates and protein (nuts, meat, fish) at one meal and replace green leafy vegetables with the fruit in the next meal.
7. Eat a large meal at breakfast, a smaller lunch and a light meal at dinner to give time for the stomach to rest overnight.

Vitamin	Iodine
	Widely distributed in natural staple foods, especially in fruits.
Function	Essential to thyroid gland in making a hormone which regulates the rate food is burned in the body. This hormone is important for proper development.
Valuable Sources	Green leafy vegetables, grown near the seashore, or in soil not depleted of iodine content and seaweed. and iodised salt.
RDA (Recommended Daily Allowance)	Adults, pregnant and breastfeeding women, children and infants can get their daily allowance by ensuring that they eat a diet high in dark green leafy vegetables or by eating a small amount of iodised salt daily.
Results of Deficiency	<ul style="list-style-type: none"> • Simple goitre • Retarded physical, sexual and mental development
<p>Source: Roslie Hurd, 2008. <i>Ten Talents: Natural foods- A diet from the garden of Eden.</i></p> <p>List the foods that you have eaten in the past 24 hours or in the last week that contain iodine and share them with the class. Do you think that you have a diet high in iodine? If not then what do you think you can do to increase the amount in you or your families diet?</p>	