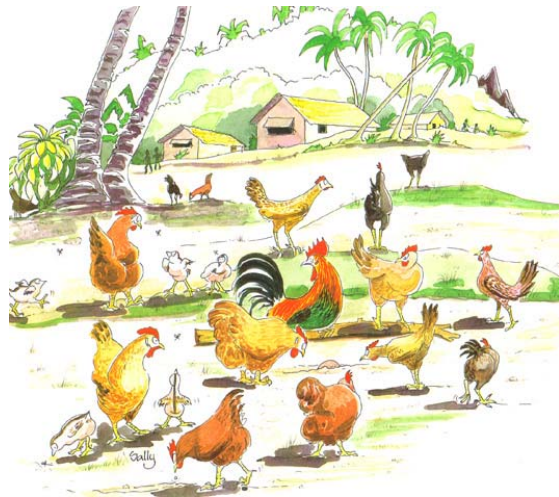


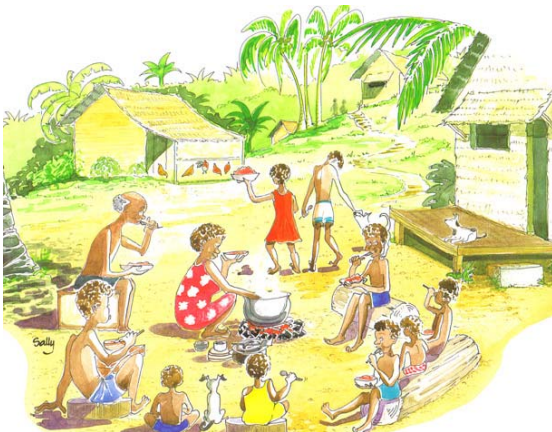
IMPROVED VILLAGE POULTRY KEEPING



HOUSING,



BREEDING,



& FEEDING



LOKOL CHICKENS

A TRAINER'S HANDBOOK

By Russell Parker

IMPROVED VILLAGE POULTRY KEEPING A TRAINERS HANDBOOK

By Russell Parker

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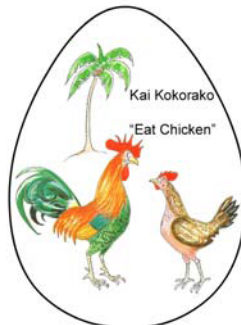
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PREFACE

This training manual has been written for agricultural extension workers, government field officers and non-government organisations training staff.

The purpose of the manual is to serve as a guide for training villagers in Improved Village Poultry Keeping so that:

- The peoples' own diets and health will improve through a greater consumption of eggs, chicken and duck meat.
- The villagers can set up a poultry keeping system as a small business to raise income for school fees, household needs and a better lifestyle for their community.
- Wildlife will be protected and conserved when the people have an alternative food source in their village poultry.

The name "Kai Kokorako" was developed from Pidgin English to mean "Eat Chicken" and "Perma-Poultry" refers to the principles of the improvement plan which are based on Permaculture, the natural method of keeping and feeding village chickens or kokorako.



This book is based on the work of Russell Parker, an Australian poultry expert with a long experience in the Solomon Islands. Russell has been interested in chicken-keeping and indigenous peoples all his life and now enjoys using these interests to assist communities at a village level.

He first came to the Solomon Islands in 1968 to work for the Commonwealth Bank of Australia in Honiara. Later in 1970 and 1973/74 he also worked for the Bank in PNG branches. Friendships made with local people at that time brought him back to the Solomons in 1990.

His book on the life of Nathan Kera, Chief of the Saikile people of Roviana Lagoon, was published in 1994.

He also worked for many years assisting the establishment of an Adult Learning Centre at Munda in the Western Solomons.

At that time, Russell started to make use of his knowledge of poultry-keeping to help village people. He also arranged for the importation of chickens and ducklings to the Tenavatu Government Farm in 1996 to improve local breeding stock. The progeny of this imported stock was distributed throughout the Solomons.

IMPROVED VILLAGE POULTRY KEEPING

Formal training in improved village chicken keeping started in 1997 with workshops at Kastom Gaden, Burns Creek in Honiara then at the Munda centre. Training is on-going with various workshops being conducted with participants from across the Solomon Islands.

These workshops provide training in the raising of chickens and ducks in villages to provide better food, fertilise gardens with waste from the chicken house and provide cash income from the sale of surplus chickens, ducks and eggs.

Further work is being done establishing a prototype Breeding and Training Centre at Graciosa Bay and also the conservation of the wild jungle fowl there. Later these centres are planned for regional areas across the country.

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IMPROVED VILLAGE POULTRY KEEPING



INTRODUCTION

This training is about improved poultry keeping in villages. “Poultry” includes chickens, turkeys ducks and geese but only chickens and ducks are available in the Solomon Islands at the moment.

THERE ARE THREE MAIN SECTIONS TO BE LEARNT

1. Housing

2. Feeding

3. Breeding

Improved poultry keeping will help provide better food for the people, better food gardens and to also provide some cash income from the sale of surplus chickens, ducks and eggs.

The lessons are designed to be used together with a printed training manual and also a demonstration model of a village chicken house and flock of chickens or ducks for practical training lessons.

Nearly every village has a few chickens or “kokorako” wandering freely but usually they are not being cared for properly by their owners. If these chickens were kept safe in a special house and given enough good balanced food every day then they will supply many more eggs and breed more chickens to eat or sell.

There are often imported chickens available too but sometimes they can be too expensive to buy and some need expensive imported food.

Both the village chickens and imported chickens can be bred together and fed local foods such as fruit and vegetables, coconut and copra, fishmeal, corn, sorghum and rice.

IMPROVED VILLAGE POULTRY KEEPING

The low cost and little work needed to set up a chicken improvement project produces much bigger results.

- The project can be immediately owned and operated by the local community with little outside support and almost immediate results are achieved so the participants are encouraged to continue.
- Better quality breeding stock and therefore better results, more eggs and a higher survival rate of the birds comes from a little extra work.
- Only small areas are needed so this project is well suited to overcrowded or small islands. Poorer quality soils such as sandy or rocky ones can also be used well.
- Waste products from community fishing activities can also contribute proteins to the poultry feed.
- There are many self supporting business opportunities as the project size increases to become financially viable including the sale of surplus stock and eggs for breeding, food outlets and support retail businesses such as equipment and food processing for larger commercial ventures if necessary.
- Expansion of the improvement ideas across the country and to other island nations also provides training and employment opportunities for the future.
- Wildlife can be preserved when a regular supply of chicken meat and eggs is available to the village and it is not necessary to hunt.
- Garden waste can be placed in kokorako houses instead of burning it. Later the manure and composted material from the floor of the kokorako house can be returned to improve the garden soil.

DISCUSS - What do you plan to do with your own improved village chicken keeping training?

- Start a small village chicken project for the family.
- Start a bigger chicken project to help the whole village
- Start a commercial chicken keeping business
- Train other people how to care for chickens better
- Start a specialist chicken breeding business

LESSON – CHECK LIST FOR YOUR VILLAGE

To be able to learn how to improve your village chickens you need to first look at your village to see what is happening with them at the moment.

It is important that the students are involved in the assessment of their villages' needs and what is currently happening there. There is a lot to learn about keeping village chickens. To do this, discuss the following questions.

CHECK LIST FOR YOUR VILLAGE	
How many chickens are in the village now? (Is there already enough to start a project?)	
How many hens, how many roosters? (Only one young rooster is needed for ten hens. There are usually too many roosters competing for the hens)	
Are they village chickens or imported chickens?	
Are they old or young? Do you think your adult chickens are too old to produce eggs?	
How many hens have chickens? How many chickens does each hen have?	
Do you know about any nest where a hen is sitting on some eggs? How many eggs does she have?	
Is it easy for you to find eggs that your hens have laid?	
How many eggs does a village hen usually lay? How long does it take for those eggs to hatch into chickens?	
9. How many chickens usually hatch under each hen?	
How many survive from that clutch to grow up?	
Do you know why only one or two chickens survive?	
Do you notice when some chickens are really sick?	
Does someone give any proper food to your village chickens?	
Does the hen with the new chickens get special food for her babies to eat?	
Do you notice if cats, dogs, hawks or snakes kill your chickens?	
16. Does every family keep chickens?	
17. Do they produce enough eggs and meat for the whole village?	
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LESSON - COMMON WORDS OR TERMS USED

It will help you understand and learn the following words and what they mean.

Balanced	Food or diet. This means that there is the right mixture of the necessary food groups included each day in the poultry feed.
Bantam	Usually refers to miniature fowls. Many village fowls are almost bantam size.
Birds	Another term for chickens or poultry
Breed	A separate group or variety of poultry.
Breeding	The process of mating selected male and female poultry together to produce young.
Broiler	Young chickens specially fed and housed for meat production.
Brooding	Raising of chickens from hatching until they have their own feathers.
Broody	A hen which is ready to sit on eggs to hatch them. Also called clucky. This hen wants to sit on the nest day and night and makes a “clucking” sound when disturbed.
Cage	Small house or pen to hold kokorako.
Chicken	An American term for fowl or hen. English/Australian term for young fowl from hatching until approx. 8-10 weeks of age when the sex of the chicken can be known and they are then referred to as cockerel or pullet.
Clucky	A hen which is ready to sit on a nest of eggs to hatch them. See broody.
Clutch	A group of eggs laid by a hen.
Cockerel	A young male chicken up to 12 months of age.
Compost	Stored vegetable, leaf, and tree matter specially gathered to mix together while rotting to place on gardens to improve soil.
Crossbreed	Chickens which have been bred by using a male from a different breed to the female. An imported chicken is a crossbreed.
Culling	Selecting unwanted chickens or ducks from a group to sell or kill
Diet	The regular types of food which is eaten each day.
Drake	A male duck.
Droppings	Manure or waste from the duck or chicken's body.
Duck	A breed of poultry that lives on and near water. Also called waterfowl. This is also the name for the female of the duck breed. Male duck is called a drake.
Duckling	A young duck or drake.
Feeder	Containers used to hold the daily feed given to kokorako.
Fence	Wall or barrier to keep kokorako close to their house and to keep people or animals away from them.
Feral	Any domesticated bird or animal which has escaped or allowed to run wild.
Flock	A group of birds or poultry.
Forage	The chicken or duck wanders around outside and searches for insects, grit and greenfood or other food which it likes.
Fowl	Chicken or kokorako.
Free choice	Different foods are supplied separately in a feeder so that poultry can choose what they need each day.

IMPROVED VILLAGE POULTRY KEEPING

Free range	Poultry are allowed to wander searching for food, as it likes.
Greenfood	Green vegetable, leaf and grass.
Grower	A growing chicken. Also means a person who grows chickens.
Hen	Female chicken over 12 months of age.
House	A building specially made for poultry.
Husbandry	Care and management of poultry.
Hybrid	Special crossbreeding of plants, birds or animals for a particular purpose. E.g. Imported kokorako specially bred for meat or egg laying are hybrids.
Incubation	Hatching eggs either under a hen or artificially in an incubator. This time can be from 21 days for chickens to 28 days for some ducks.
Jungle fowl	The original wild species of chicken. Called Santa Cruz or Mendana fowl in the Solomon Islands.
Kai	Pidgin English for eat or food.
Kokorako	Pidgin English for chicken or fowl.
Manure	The waste or droppings from the chicken or duck.
Pen	House or cage for chickens or ducks.
Perch	Sticks placed in a poultry house, which allow the birds to roost off the ground like they would if they lived in the wild.
Permaculture	The process of growing gardens and animals using soil improvement and pest control from natural methods.
Poultry	Chickens, ducks, geese and turkeys are all poultry.
Predator	Any bird or animal which preys on another. Dogs, cats, snakes and hawks are all predators of poultry.
Pullet	Young hen to 12 months of age.
Purebreed	A separate breed of poultry which produces young the same as itself.
Roost	The natural instinct of fowls to sleep up in the branches of trees to keep safe. This is artificially provided in pens and also called a perch.
Rooster	Male chicken over 12 months of age.
Set or sit	Natural process of a hen sitting on eggs until they hatch. See also Clucky or broody
Setting	Can mean a collection of eggs ready to be hatched or actually sitting on the eggs.
Stock	Collection of animals in this case poultry.
Strains	Various breed varieties or different breeding backgrounds.
Unit	Group or collection.
Vent	Hole at the backside of the kokorako where the waste comes out, eggs are laid and where the sex organs are located.
Waterer	Container used to hold the fresh water each day for the kokorako.
Waterfowl	These are poultry such as ducks and geese, which prefer to live on, or near water.
Yards	Fenced areas to hold animals in a particular area.

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**THE RED JUNGLE FOWL
(ST CRUZ FOWL, MENDANA CHICKEN OR WILD KOKORAKO)**



The Red Jungle Fowl are claimed to be the ancestors of most of the domestic chicken breeds of today. As such they are of immense value to both the world food sources and economics.

Over the centuries these birds have been distributed across the world from their main areas of origins in Asia by explorers, travelers and settlers.

Both natural development and selective breeding have contributed to the numerous varieties of fowl which now exist throughout the world.

Inbreeding, hybridisation and genetic engineering efforts in recent decades have taken us even further away from these natural birds, the Jungle Fowl.

Therefore the small pockets of jungle fowl still living in the wild are almost living dinosaurs and as such should be of great interest and value to the world.



According to local oral history the fowl and pigs which roam free on islands such as Santa Cruz in the Solomon Islands are said to have arrived with Spanish explorer Mendana in the late 16th Century however records have shown that chickens and pigs were already on St Cruz when Mendana arrived.

IMPROVED VILLAGE POULTRY KEEPING

The wild jungle fowl of Santa Cruz are known to outwardly resemble their counterparts in nearby Vanuatu and Fiji although DNA testing would probably be the only sure way of confirming any connections

Did these birds arrive from the north-west with the Austronesian migration or from the north with the Polynesians? Were they further dispersed by inter-island trading trips?



European settlers and traders have perhaps contributed a little to the bloodlines of these wild birds through their importation of fowls from Australia or New Zealand. However there has been no major European habitation in the Eastern Solomons where these jungle fowl flourish.

There has been some cross breeding with village fowls close to villages or where a village male used as bait has escaped into the bush.

The continued survival of these wild fowls is not only of environmental, genetic and historical importance but also as a source to toughen the survival characteristics of village poultry in the islands.



Lionel Vaonelva with this male which was caught during June 2005 and had been in captivity for five months was in a very healthy condition at the time of this photo

IMPROVED VILLAGE POULTRY KEEPING



The trapping of wild jungle fowl has been a hobby of St Cruz people for many centuries



Bruce from Luepe Village, with his wild caught male

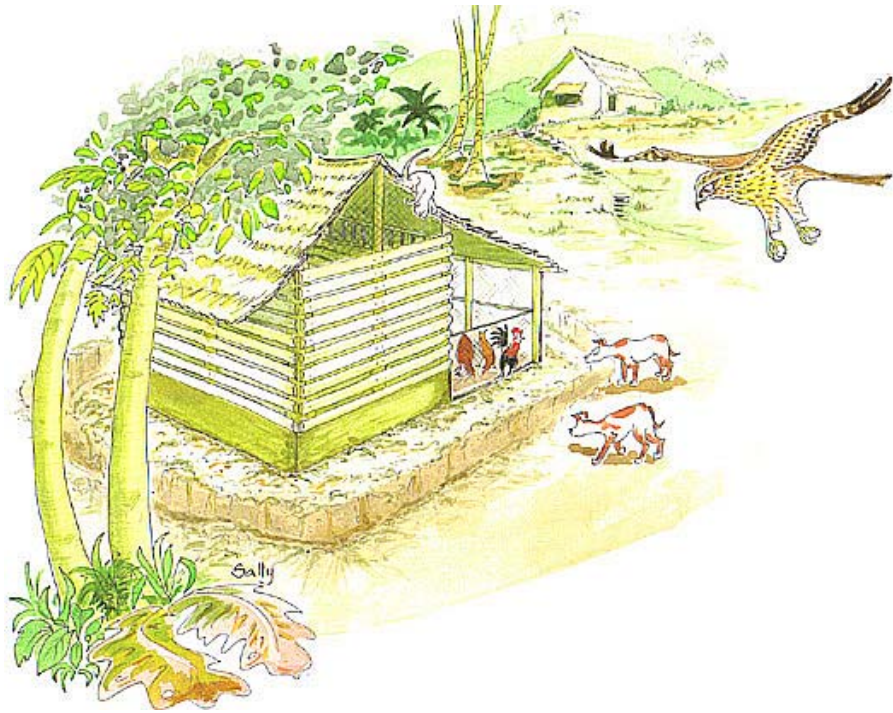
As the St Cruz Fowl have now been placed on the protected species of the Wildlife Act by the Solomons Government research into the scientific background on these fowl will also contribute to the re-education of the people away from hunting the jungle fowl for sport towards conservation.

HOUSING

One of the three most important points of improved village chicken keeping is that your chickens are kept safely in their own house. They are kept there for most of the day so that you can find eggs easily and the poultry are kept safe from predators.

This house can be built with bush materials the same as your house. If you don't have the special house for the kokorako then you can't control their breeding, feeding and egg collection properly so you won't be very successful. Kokorako houses made from bush materials are also more suited to the tropical climate than permanent materials.

Each house should be big enough to have five good size rooms to allow for dividing the kokorako into breeding and growing groups or you need to build four or five separate smaller houses.



LESSON - HOUSING

After you have made your plan to build a house then you should ask yourself the following questions:

1. Is the chicken house built in the right way?	
2. Are there enough separate rooms with plenty of floor space for each age group of kokorako?	
3. Does each room have the right floor plan to suit the kokorako inside? E.g. nests with good material inside for laying hens? Permanent feeders and waterers for meat chickens? Perches for layers and breeders?	
4. Are the kokorako safe from dogs and pigs? Are the walls strong with logs around the bottom to stop digging underneath? Can cats get into the kokorako house?	
5. Do the walls allow air to circulate but keep out the rain?	
6. Is the grass or leaf on the floor of each room changed every four days? Fresh grass and leaves should be placed on the floor of the poultry house to catch droppings and to prevent disease.	
7. Is it clean and tidy around the kokorako house? This will help keep rats away and stop predators hiding close to the chicken house.	
8. Is the land where the kokorako house is built close to the food garden?	
9. Is the land dry enough to build on? Will it need drains?	
10. Will security be a problem? Are there houses close by to guard the kokorako from thieves? Can the doors to the rooms be locked?	
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Kokorako houses can be built off the ground to allow air to circulate underneath, to stop dogs and pigs digging in or to avoid floodwater.



**Kokorako houses can also be built on the ground
Note the drains around the house to stop flooding**

They need a raised floor of soil or gravel inside to avoid flood water, logs around the outside and stronger walls to stop dogs and pigs.

LESSON - HOUSING

DISCUSS examples of kokorako houses that you see.

Houses made of timber and corrugated iron become too hot during the day. Care should be taken to make sure that these chicken pens and houses are predator proof, well ventilated, shaded and drained so the birds remain healthy and safe.

Strong walls built from sticks or boards should be on the bottom half of all walls to stop dogs, cats and pigs from breaking into the kokorako house.

The top half of each wall should be closely woven sticks or bamboo to stop kokorako escaping and to stop cats from climbing into the house.

Nests for layers and sitting mother hens can be constructed of bush materials and disposed of after use by burning or on the compost heap



Kokorako houses can also be made of permanent materials like sawn timber and wire netting if you have the money. See how boards are nailed on the sides of the house to stop dogs and pigs.

If possible separate houses should be constructed on fresh ground for each batch of growing chickens or make sure the permanent floor is cleaned well. Replace the grass on the floor every four days which helps keep them free of disease.

You can also use a small moveable house for baby chickens so that it can be on a fresh piece of ground every four days.

This chicken pen should be constructed of heavier material and feature outrider bars to discourage dogs and pigs digging under the pen. Woven sides on these chicken pens ensure that the chickens stay inside with their mothers and remain safe from predators.



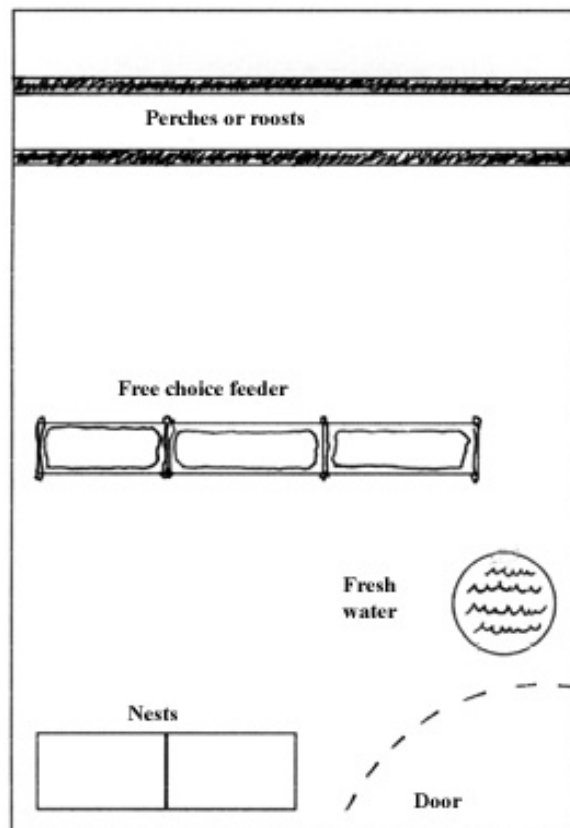
Any spare young male birds kept for fattening to eat can be kept in smaller pens so they do not have too much room to move around in and lose weight. Too much activity will make these meat chickens lose weight.

LESSON – HOUSING**AREA REQUIRED FOR DIFFERENT AGE GROUPS OF CHICKENS**

To keep your chickens healthy and happy you need to allow plenty of space for them to live in their pens and houses. When they are small less area is needed. As they grow older and bigger more area is needed.

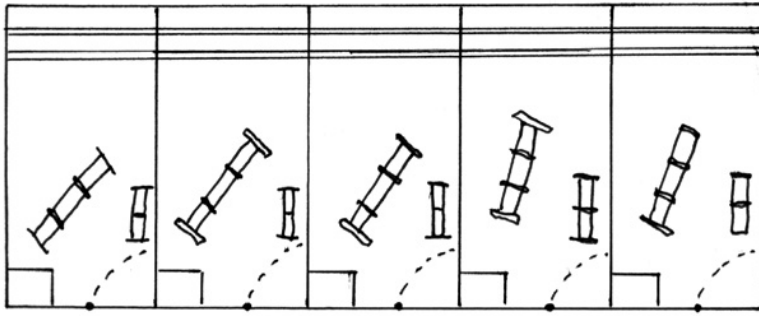
Age	0 – 5 weeks	5-10 weeks	10 –20 weeks	Adults
Each kokorako	.50 sq m	1 sq m	2.5 sq	4 sq m

You need to build a separate house for your kokorako and arrange it so that it is divided into different rooms for your breeding kokorako, young ones and mother and baby chickens.

LESSON DISCUSS THE BASIC FLOOR PLAN FOR A KOKORAKO HOUSE

This floor layout should then be copied in each room of the poultry house.

IMPROVED VILLAGE POULTRY KEEPING



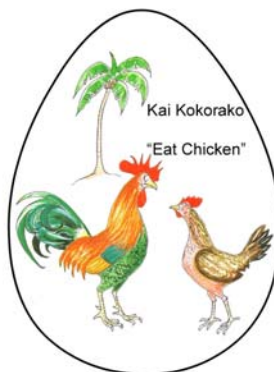
DISCUSS the finished house, how to divide it into rooms, its layout and features

Perches or roosts should be put at the back of the room as high as possible. This is because it is natural for the kokorako to sleep high up in trees for safety. If you have the perch at the back it also allows the kokorako to sit there quietly whenever you go inside the room.

The nest, feeder and water bowl should all be close to the door at the front of the room so that you do not disturb the kokorako too much when you go inside the room.



This is another good example of a kokorako house, which has been well made from local bush materials for very little cost. It can also be built on sloping land or poor quality soil which is not useful for gardening.





Chickens naturally like to perch high up as possible especially at night away from predators.

DEMONSTRATE how you should erect the roosting pole inside the kokorako house at the back and as close to the roof as possible but still leaving enough room for the chickens to stand.

Approximately one foot or 30cm length of perch should be allowed per kokorako so there is enough space for each one and they don't fight.

REVISION – HOUSING	
Why do you need a special house for your kokorako?	
1. Why should bush materials be used to build this house?	
2. Why do you need to divide the kokorako house into rooms?	
3. Explain how the floor plan for each room should be laid out and what items are needed in each room for the different ages of kokorako.	
5. Why do you use a perch or roost inside the kokorako house? Where do you put it?	
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FEEDING

One of the three most important things to learn is that correct feeding of village chickens will not only improve the production of eggs and meat but also keep them healthy.

The feeding program is designed to be as simple as possible so that it is likely to be continued and the project not fail.

REMEMBER!

GOOD FEED FOR YOUR KOKORAKO MEANS GOOD FOOD FOR YOU

Villagers should think of the chickens as an extension of their family food gathering duties so that when a meal is prepared for the family the poultry feeding is done as well.

Imported processed commercial feeds are too costly for most villagers and locally grown grain of any sort is not really available in many island villages. This diet for poultry is based on common locally available produce and fed to the poultry with allowances made for the needs of both age and sex groups.

CHECKLIST - FEEDING	
1. Is there a garden close to the poultry house?	
2. Are the kokorako fed the three food groups every day?	
3. Is there always fresh clean water for the kokorako every day?	
4. Is the right amount of food given each day and nothing left for rats at night?	
5. Are the kokorako given small amounts of new food or taming food during the day?	
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FREE CHOICE FEEDING

Kokorako know what sort of feeds they need for a balanced diet so all you need to do is provide some of each food group separately in containers and the kokorako will take as much as they need of each. This is called free choice feeding.

In overseas countries where commercially mixed feed is used the kokorako don't get the choice of what they eat and this can be very wasteful and unnecessary.

Free choice feeding to be carried out early morning when the day is cooler and the birds are more inclined to eat.

A mixture of the food groups should be provided separately so the kokorako can choose what they need to eat

DEMONSTRATE HOW you use three different buckets or similar containers to collect the separate food groups each day.

The daily food can be supplied to the kokorako in three separate types in a local feeder.

You must give kokorako fresh clean water to drink every day.

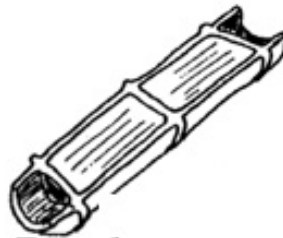
DISCUSS how local feed and water containers can be made from bamboo, seashells, and coconut shell or carved wooden bowls.



Clam shells



Coconut shells



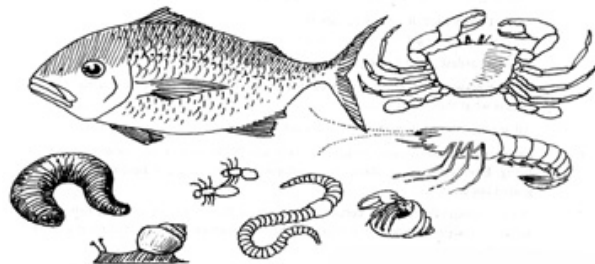
Bamboo



Carved bowls

Feed should be provided everyday from the following three groups so the kokorako can choose its own needs each day.

1. Protein: The main components of the protein requirement can be taken from cooked fishing waste and animal offal when available, earthworms and insects including white ants plus bean and peanut meal once gardens are well established. Fishmeal in bags from canneries is an ideal protein source for larger poultry projects.



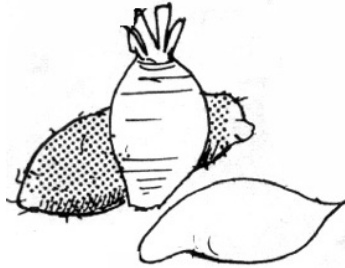
Live Protein



Beans and peanuts can be crushed and used as good protein feed for kokorako

2. Energy Foods: The most commonly available will be fruits and vegetables plus sugarcane, yams and potatoes.

Poultry will be allowed to free range after the middle of the day so they will have access to leaves and grasses as well as the insects. Potatoes should be boiled to better use the starch and animal fat can also be fed for energy in the hot climate.



Cooked potatoes, yams or taro make very good energy feed for kokorako

DEMONSTRATE how rice, or other grain when available or grated coconut, can be fed as an evening encouragement for the poultry to return to their house. Coconut, both fresh and dried (copra) will form the major basis of the food as it is readily available on most islands. Up to 50% of meat chicken feed can be good quality copra whereas generally growing birds should only be fed 30% of total daily feed amount and layers 20%. Care should be taken that the copra is of good quality otherwise it could poison your kokorako. The leftover copra cake from oil extraction for soap, which has been available in the Solomons, makes a suitable energy food for chickens.

Whole grain is an valuable part of chicken feed and is available in limited amounts in the Solomons as corn or maize, dry land rice or sorghum.

Sorghum is a crop well suited to village gardens and only needs a little processing to be suitable feed for kokorako.

The heads are cut from the stalk when they are ripe, dried in the sun and then hung in the kokorako house so that the kokorako can jump up to take the seed.



Sorghum heads drying in the sun

3. PROTECTIVE (Minerals and Greenfood): Most villages have access to seashell, which can be burnt and crushed to provide calcium and grit for the poultry. Crushed animal bones also provide calcium and phosphorous with salt being available from seaside pools or seaweed.

Your kokorako can find the small stones they need when they are free ranging to help process their food.

Greenfood is another very important food for chickens can be provided to the pens as green leafy vegetables, cut grass and access to grass yards in the afternoon. Vitamins are provided from the fresh green leaves of plants.

Paw paw, chili, Japanese cabbage and hibiscus are also good protective foods for kokorako.



Crushed animal bones and sea shells are good calcium and grit for poultry

LESSON -DISCUSS the different types of food available in the garden.

Draw a map of your garden to show where the different crops are grown and where the kokorako house is located.

LESSON - FEED QUANTITIES

The main idea of this project is to keep the requirements as simple as possible so that the basics are maintained and the desired results are achieved.

Therefore the feed quantities should be based on handfuls or common receptacles such as half a coconut shell.

The villagers will be encouraged to remove surplus food from the chicken pens each evening so rats won't become a problem in the pens and this spoiled food placed in compost heaps for the garden.

Energy Foods	Protein Content %	Maximum part of diet
Cassava	1	Half
Coconut, fresh	8	One third
Copra	7	One third
Corn or maize	9	Half
Sago	1	Two thirds
Sorghum	9	Two thirds
Sweet potato	4	One third
Taro	4	One third
Unpolished rice	11	Half

IMPROVED VILLAGE POULTRY KEEPING

Protein Foods	Protein %	Maximum part of diet
Coconut meal	20	One third
Fish meal	55	One tenth
Leucaena meal	25	One tenth
Meat meal	45	One seventh
Soybean meal	30	One third
Sunflower	25	One third

Rates of feeding protein and energy foods should be approximately	Protein	Energy
For Baby chickens to 6 weeks of age	50%	50%
For Growing pullets	10%	90%
For Meat chickens or young cockerels	30%	70%
For Layers and breeding kokorako	20%	80%

LESSON - SHOW a simple method to measure percentages

LESSON - BABY CHICKEN FEED

The diet for chickens in the first two or three weeks of life should include boiled eggs.

The other parts of their diet should be as per the table above. All foodstuffs provided in the baby chicken's diet should be finely chopped so they are easier for the chickens to eat.

It is difficult to make a single chicken food from the ingredients listed because what food is available and the ages of the poultry will vary from community to community.

Therefore after the chickens reach 6 to 8 weeks of age their feed should be provided separately in the three food groups to encourage free choice feeding.

Constant supplies of grit (sand & gravel) and bone should also be made available to birds of all ages and stages of development.

It is important for baby chickens to have a good variety of foods to help their bodies develop properly inside to fight disease too.

REMINDE STUDENTS that if you want to introduce new or different types of feed to kokorako they have to be trained first.

The best time to introduce these new types of feed is at evening feed time or when you are trying to tame your kokorako.

IMPROVED VILLAGE POULTRY KEEPING

REVISION – FEEDING	
Why is it necessary to give kokorako a balanced diet every day?	<ul style="list-style-type: none"> • To keep them healthy • So they grow strong • So they breed well and lay lots of eggs
What are the three main food groups you should select the kokorako feed from each day?	
Name some of the foods from each group?	
4. How often should you feed kokorako?	
5. How much food does each kokorako need every day?	
Why is it better to give your kokorako local feed?	<ul style="list-style-type: none"> • Imported feed is expensive • Sometimes delivery is difficult • It is better if the kokorako select the different food it needs each day rather than be forced to each an imported mixture
What special foods should you give baby kokorako for the first few weeks?	<ul style="list-style-type: none"> • Boiled eggs smashed into small pieces • Small grains like rice, mung beans and small corn seeds • Other kokorako foods should be smashed smaller for the baby chickens
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IMPROVED VILLAGE POULTRY KEEPING
LESSON -DIGESTIVE SYSTEM OF A CHICKEN

As discussed when a chicken is killed and innards removed.

When food is eaten it goes down through the tubes in the kokorako's body.

EXPLAIN the parts of the body in a kokorako, which has been killed and cut open.

Mouth and beak – The kokorako does not have any teeth, only a strong beak to pick up and break its food to eat.

Air tube – this is connected to the nose of the kokorako which is found in the top of the beak. Also demonstrate where the lungs are in the body.

The crop – follow the food tube down from the beak to the crop where the food is stored ready to move on later to the stomach and gizzard.

Gizzard – cut open the gizzard and show the students how the strong muscles inside grind the food with the help of small stones and other hard material which the kokorako has specially eaten to help this process.

EXPLAIN how the digested food passes through the rest of the body and is absorbed into the body through the liver.

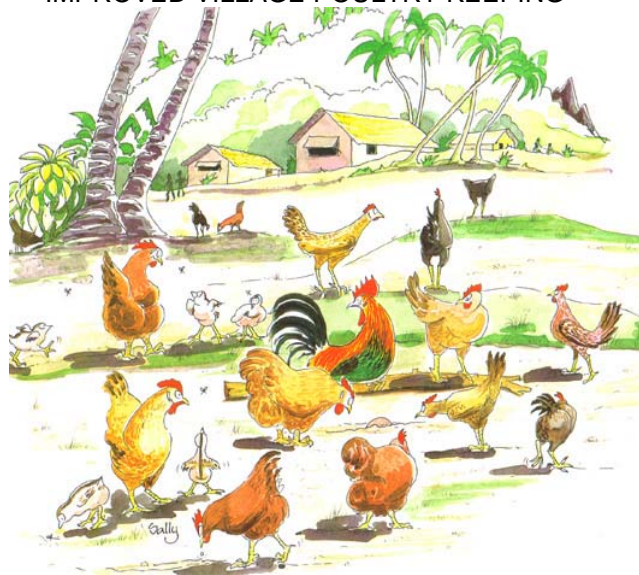
Finally explain how the waste food is passed out as droppings through the cloaca and vent.

EXPLAIN that birds do not pass urine separately just one lot of waste as their droppings.



GOOD FEED FOR YOUR KOKORAKO MEANS GOOD FOOD FOR YOU

IMPROVED VILLAGE POULTRY KEEPING



BREEDING

This project is based on building up the numbers and quality of the local chickens quickly through selective breeding, correct feeding and captivity.

CHECKLIST - BREEDING	
1. Do all the kokorako look healthy?	
2. Are the kokorako rooms crowded?	
3. Are the kokorako kept in their houses most of the day?	
4. Are the kokorako easy to catch or are they too wild?	
5. Is there a plan to let one room of kokorako walkabout each afternoon?	
6. Does someone make sure the kokorako house is shut every night and all of the kokorako are inside?	
7. Is there always someone guarding the kokorako everyday and visiting them through the day?	
8. Are the eggs collected every day?	
9. Are the eggs stored properly?	
10. Is there only one rooster with the right number of breeding hens?	
11. Are the different ages and sex groups of young kokorako in separate rooms?	
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The first important thing to do is select a suitable flock of breeding chickens to suit your village needs.

Depending upon the size of the family or village needs you can start with five to ten hens and one rooster. It is a good idea to keep both village and imported hens together as the village hens will provide the necessary broody hens throughout the year and the imported hens will lay more eggs. This mixture will suit a large extended family or small village.

There have been imported breeds in the breeding of village poultry for many years so it is not necessary to import further chickens. If they are given better feeding and management the local village fowls can produce some good results almost immediately.

By keeping them in pens for most of the day, feeding them properly and breeding correctly better results can be achieved.

Select from the surviving village birds for use in the breeding program to provide the following good features in the new flock:

- It will be a more active forager and hardier bird.
- They will be more aggressive protecting their chickens and not such easy prey for predators.
- They will fly well and can roost higher at night than other introduced birds.
- The village hens have just become smaller over the years because they have been allowed to wander and breed freely without very much care.
- Good feeding and management of these fowls will produce better meat and eggs.
- Village fowls are a smaller, more compact breed so they don't eat as much as larger imported fowls but still produce lots of eggs.
- Females from the improved breeding line will ensure determined broody hens and very protective mothers.
- The present village fowl is a very active forager and it also shows great interest in any food scraps thrown to it. Therefore it will adapt well to the proposed free choice feeding system of locally based feeds.
- Because of their tight feathering and more active nature semi feral fowls appear to be more successful breeders than many soft feather fowls and usually continue to breed to a greater age.
- It is a good idea to crossbreed the village fowls with imported varieties to mix the good qualities of both together. The poultry will revert to their

IMPROVED VILLAGE POULTRY KEEPING

natural colours of the jungle fowl and therefore provide some camouflage especially for nesting females. The natural brown striped colouring of the chickens from moment of hatching is also great camouflage.

- In the selection of fowls for the village flock you should look for qualities such as open, alert eye and strong beak legs and toenails for foraging for food.
- In countries like Solomon Islands where wild populations of the original jungle fowl still live there are also mixtures of this self sufficient wild fowl with the village chickens. Every effort should be made to obtain breeding roosters from areas where there are possibilities of jungle fowl existing in the rooster's breeding background.

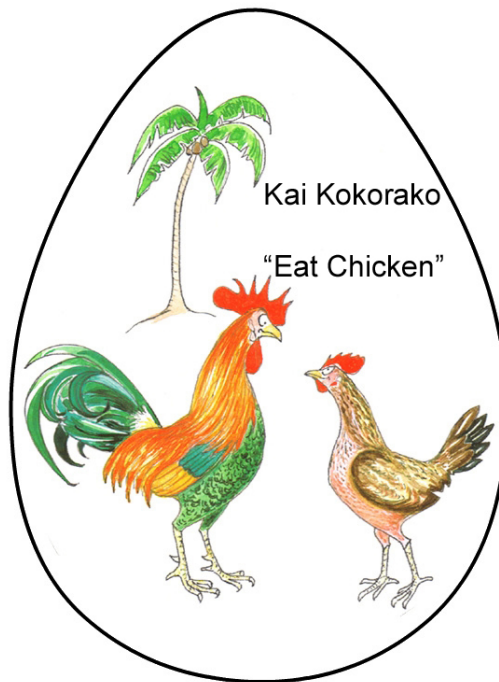
LESSON - WHAT ARE THE MAIN THINGS WE ARE LOOKING FOR IN A BREEDING FLOCK?

Kokorako which are very active and search for their own food.

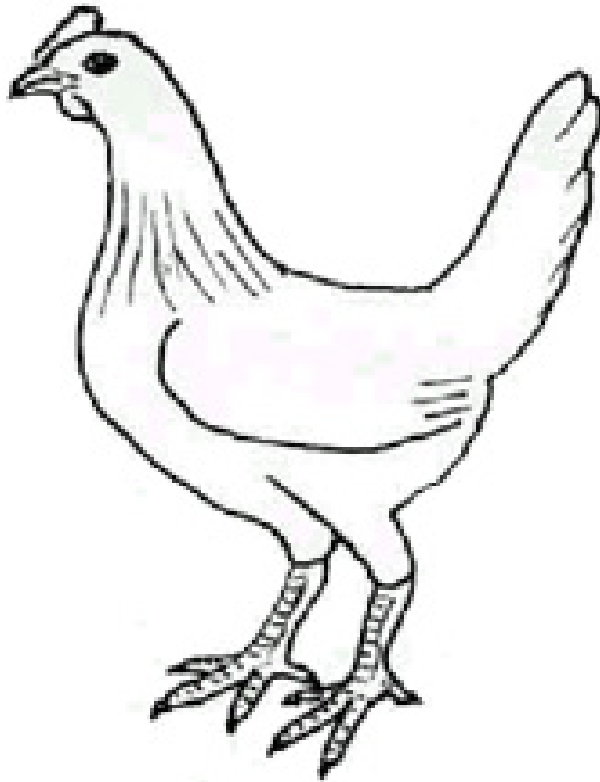
Strong and healthy young chickens

Good egg layers

Good as broody hens



LESSON - IDEAL ISLAND HEN



LESSON - DISCUSS the features of the ideal island hen

- She has open alert eyes (Always watching for predators such as cats, dogs and hawks plus finds food easily)
- A strong beak (To protect itself and chickens plus for finding food)
- Strong legs and feet (For scratching and finding food)
- Light feathering (The light feathers are better in the hot weather of the Solomons than fluffy imported chickens which feel the heat and need to drink more water)
- Compact body (Needs less food and can fly to escape danger easier)

LESSON - BREEDING

NEEDS: Two or three different roosters to compare their different qualities.

DISCUSS why you need both imported hens and village hens together for a successful kokorako project. i.e. imported for eggs and village for broodies

MENTION that for successful breeding you need good quality eggs, which come from well cared for kokorako

LESSON – THE BREEDING ROOSTER



You must always have a healthy rooster with your hens to make sure you get good fertilised eggs for breeding. You only need one rooster with up to ten hens. If there is more than one rooster then there is a lot of fighting and each rooster cannot do its job properly.

The sex organs of kokorako are small and the rooster & hen need to mate closely to fertilise eggs

The rooster, which is with the breeding hens, should be young and healthy so he does a good job guarding the hens and fertilising their eggs with his sperm.

The male chicken or kokorako is called a rooster or cock. Inside his body are two pale yellow organs called testes, which make the fluid or semen. This semen contains many small things called sperms, which can join with an egg and make it grow into a chicken

LESSON – SEXING KOKORAKO

The differences between adult roosters and hens are easy to see and have been discussed already.

You have to look closer at growing chickens to be able to tell the males from the females.

It is difficult to tell which sex baby chickens are because their sex organs are very small and located inside their body.

Usually the young roosters (or cockerels) grow faster than their sisters do and you will notice they are developing combs and wattles but the young hens (or pullets) are much slower to develop their combs.

Some varieties of kokorako also show differences in their feather colouring as they grow. The cockerels might show brighter colours in their feathers whereas the young pullets might grow plain coloured feathers.

You don't need a rooster with your hens to get eggs but the hens need to be healthy to be able to lay.

A rooster is needed when you want to breed chickens.

Chicken eggs and meat are very good sources of protein.

Like kokorako, people need three main kinds of food – energy foods, protein foods and protective foods.

Energy foods are root crops, grains and fruit.

For protein foods you need eggs, fish, animal meat and some plants like peanuts, beans and peas.

Protein foods help our bodies grow. Many people in the world don't get enough protein.

Children need more protein than adults do because they are still growing.

Both the egg yolk and white around it contain a lot of protein.

An egg has a pointed end and a round end. The round end is the one that is laid first by the hen.

LESSON - EGG-LAYING

If you have good hens, which are not too old and are cared for properly they will give you plenty of good eggs for eating or breeding.

DISCUSS how it takes a long time for chickens to be ready to lay eggs. Most imported chickens do not begin to lay until they are at least 5 or 6 months old. Female chickens, which have not started to lay, are called pullets until they reach 12 months of age. Village pullets may take 7 or 8 months to lay their first egg because they have not been bred specially to lay eggs.

DISCUSS how it will be part of the student's training to learn how to improve the breeding and care of village hens so they can also lay lots of eggs during lives.

MENTION that when the pullets start to lay their eggs can be small but as they grow older the egg size will get bigger. Eggs are laid in groups called clutches. For example a village hen may have a clutch length of only six so she will lay an egg every day until she lays six then she will rest for a day before she starts to lay again. If the eggs are left in the nest the village hens might decide to try and hatch them and not start laying again. She will be then called broody and sit on those eggs for 21 days to hatch them.

COMPARE that to the clutch length of an imported laying fowl which may lay 12 or 15 eggs, one each day until she has a days rest then starts again without going broody.

EXPLAIN that it is a good idea to have a mixture of both imported and village fowls so that you always have both eggs and broody hens to keep your flock going.

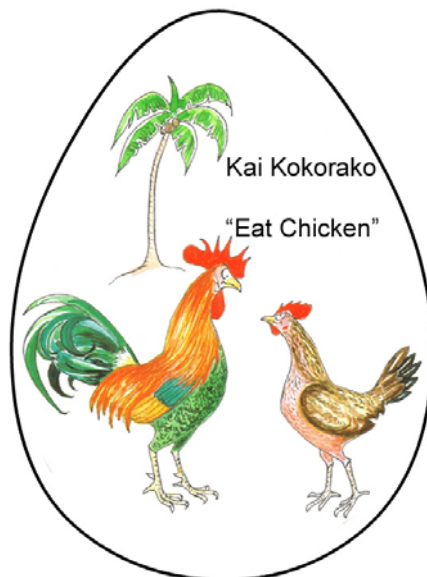
DISCUSS the laying cycle as part of the above diagram. Most eggs are laid in the morning but each egg in a clutch is laid later than the one the previous day until the last egg is laid at 3pm. Eggs are caused to start leaving the ovary by the rising sun in the morning so because in most hens it takes 26 hours for an egg to be made inside them this explains why that eventually the hen has a day off laying.

LESSON – DEMONSTRATE HOW YOU TELL IF A HEN IS LAYING

- The vent is soft and moist
- There is a two finger space between the pelvic or laying bones



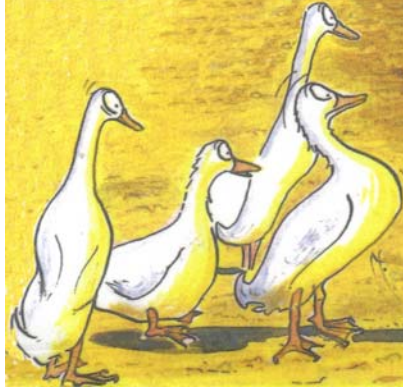
LESSON - EGGS & LAYING	Answer
1. Why are there blood vessels around the yolk sacs in the ovary or a blood spot on an egg?	To bring food to the yolks.
2. How long does it take for a hen to make an egg?	26 hours.
3. How long does it take to make the shell of an egg?	20/21 hours.
4. How many months old does a pullet need to be before she lays her first egg?	From five to nine months
5. What is the latest time a hen will lay during the day?	Approximately 3 pm
6. What starts an egg leaving the ovary?	The rising sun
7. Hens lay eggs in groups. What are these groups called?	Clutches.
8. How long does it take for a clutch of eggs to hatch?	21 days
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REVISION – BREEDING	
Give three main reasons why the village kokorako suit the Solomons	<ul style="list-style-type: none"> • They are already bred with a good mixture of imported and jungle fowl. • They can survive well on local foods as well as finding their own food in the village. • They are suited to the tropical climate in the Solomons.
2. Name the three main points to help select good breeding kokorako:	<ul style="list-style-type: none"> • Strong and healthy young kokorako if possible. • Good egg laying hens. • Good mother hens.
3. How many roosters should be kept with how many hens?	
4. How many hens with an old rooster?	
5. How many hens with a young rooster?	
6. How do you tell if a hen is healthy and laying?	<ul style="list-style-type: none"> • Finger measurement at back of hen. • Red comb and wattles. • Healthy shining feathers. • She is making happy sounds.
7. How old does a young hen or pullet need to be before it lays eggs?	<ul style="list-style-type: none"> • Village pullet - nine or ten months. • Imported pullet which needs more imported feed six months.
8. Do you need a rooster with the hens to make them lay?	
9. Do you need a rooster with the hens to make sure you get baby chickens to hatch? Why is that?	
10. Explain some ways that you can try and tell the different sexes of young chickens.	
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DUCKS IN THE SOLOMON ISLANDS

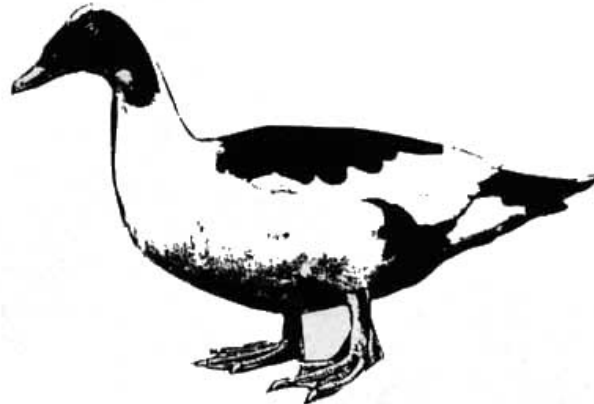
Ducks are a group of birds which live a big part of the life on or near water. There are not a lot of ducks in the Solomon Islands but they are known to the people and can also provide good supplies of eggs and meat with less work than kokorako.



Have you seen ducks in the Solomon Islands?

The most common domestic duck seen in the Solomons is the Muscovy duck, which is either white, or black and white in colour. It suits the living conditions in well because it likes to wander around and feed on grass as well as the normal waterfowl foods like insects, shellfish, small fish, tadpoles, frogs and water plants. Muscovy ducks also benefit from prepared foods from the garden but other domestic duck breeds, which may be available, require more prepared foods.

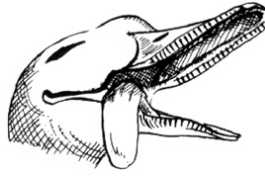
Ducks do not lay eggs all year like kokorako so you need to make sure you hatch as many as you can during the breeding season.



Muscovy duck

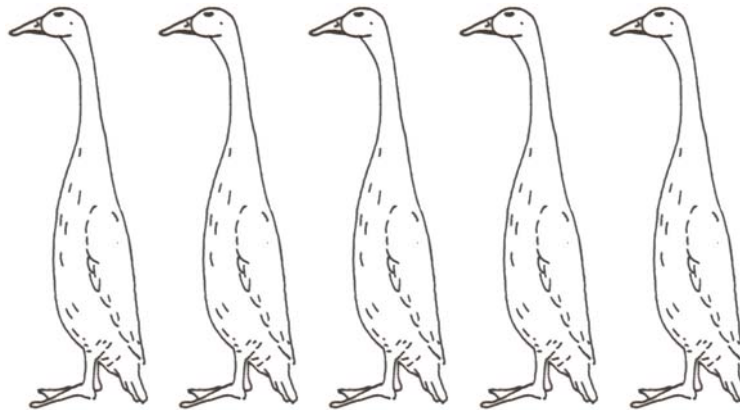
Muscovy ducks like to eat grass so they need less extra feeding and they have special teeth on their beak to help them eat grass different to chickens, which have no teeth.

Chickens don't have teeth and eat their food in a different way to ducks.



The teeth can be seen on the sides of the duck's beak

They lay big clutches of eggs when they are breeding and often hatch many more ducklings than a hen does chickens.



Indian Runner ducks

Another very important breed of duck for the Solomon Islands is the Indian Runner duck. It is called this name because it is a smaller duck than the Muscovy and stands up straighter so it looks like it is running.

These breed of duck are better egg layers and are good for vegetable gardens because they like to eat the insect pests without damaging the garden.

A Muscovy duck would eat the garden too and a kokorako would scratch all the plants out.

Sometimes the Indian Runner duck does not hatch its own eggs properly so they need to be placed under a Muscovy duck or they can also be hatched under broody hens.

Ducks will need the same care and management as kokorako. They will also need some extra feeding and protection from cats, dogs and pigs.

Even though caring for ducks is similar to kokorako ducks need a bigger water supply and larger grassed yards to live in.

Housing for ducks is different to kokorako because they don't need perches or roosts and the floor of the duck house should have gravel to drain away the water which ducks like to splash about.

Nests need to be bigger for ducks and they should be made on the floor of the house.

IMPROVED VILLAGE POULTRY KEEPING

You will also need a larger area of fenced garden to feed the ducks. They need more area to walkabout and they will eat insects in your garden.

They also need high fences around the garden to keep out dogs and pigs and the ducks can walkabout.

Ducks should not be kept in the same house as kokorako because wet and dirty floors are not good for the health of kokorako.

The ducks should be given access to a small pool of water to swim in during the day after mid morning when most should have laid their eggs so that eggs won't be laid in the water. A smaller clean container of drinking water should be kept inside their house all the time.

They can be fed their local feed supplement in the evening to encourage them back to their night yard.

Other than perhaps some cutting of the feathers on one wing of the ducks to discourage straying they should require less work than kokorako.

LESSON – DUCK BREEDING

When stock becomes available duck breeding units can be smaller than kokorako with just pairs or trios of ducks and geese able to produce plenty of eggs and meat for a small community.

These 'breeding unit' numbers only need to be multiplied to suit larger communities or commercial activities

Muscovy ducks lay a large clutch of 15 or 20 eggs, which take 35 days (five weeks) to hatch. Other ducks take 28 days, which is longer than the 21 days it takes to hatch kokorako eggs.

The young ducklings can be independent of their mothers a lot earlier than chickens and will respond well to artificial rearing if necessary.

LESSON – DUCK NESTS

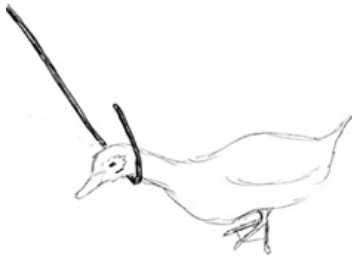


The female duck builds a bigger nest than a kokorako and covers the nest with its own body feathers to keep the eggs warm when it leaves the nest to eat and drink.

A good shelter for a duck nest can be made from a big bundle of sticks, palm fronds or bamboo. This should protect the sitting duck from the rain and sun the duck will build up its own big nest inside.



LESSON – CATCHING & CARRYING DUCKS



DEMONSTRATE that duck legs are not as strong as the kokorako's so ducks should be caught by their neck because it is stronger. Care is needed because ducks are often bigger than kokorako and much stronger to hold.



Carrying ducks by their wings with both your hands is ok



But is better if they can be carried under your arm, which stops their strong wings from flapping in your face

LESSON - SEXING DUCKS

Being able to tell the sex is an important part of managing your kokorako or ducks properly. Kokorako have small sex organs inside their body so other ways are used to tell what sex the kokorako are.

Ducks are different to kokorako because they can be examined at an early age.

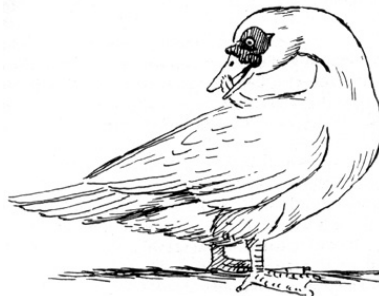
DEMONSTRATE how adult ducks should be held to examine what sex they are and explain the body differences



The sex organs of the drake and duck are very different as you can see from the pictures below. Drake or male duck on the left and duck on the right

LESSON - SWIMMING POOLS FOR DUCKS

You will notice both chickens and ducks “preening” or running their feathers through their beaks at certain times of the day.



All birds have an oil sac at the base of their tail where they squeeze oil from to waterproof their feathers. You will notice that ducks need to use more of their oil because they swim in water a lot and need to keep their body waterproof or they will sink and drown.

POINT OUT where the oil nipple is.

IMPROVED VILLAGE POULTRY KEEPING

Ducks are waterfowl and so they need to not only have lots of fresh water to drink but also to swim and wash themselves with.

If you live near a creek, river or lagoon you can let your ducks swim there at the end of the day if you can guard them carefully so they won't get lost or eaten by other animals.

You can also provide a small pool in your duck yard either building it from rocks and cement or by using a drum or tub.

It is best if you can provide a pool at least 30cm or one foot deep and one metre or three feet across. You will need to clean the water in this pond at least once a week.

Remember try to keep the ducks out of the pond until the afternoon so that they don't lay their eggs in the water.

DEMONSTRATE how you can build your own pond by cementing rocks in a circle. Also include a short pipe with a tap or plug to drain the pond when it is being cleaned.



A flock of mixed breeds of duck at Tenavatu Farm 1997

REVISION – DUCKS		
Have you seen ducks in the Solomons? Were they imported ducks or wild ducks?	<ul style="list-style-type: none"> • Were they imported ducks? <p>Were they wild ducks?</p>	
What breed of imported duck?	<ul style="list-style-type: none"> • Muscovy • Indian Runner • Other 	
Explain about the wild ducks you saw	<ul style="list-style-type: none"> • Where did you see them? • Did you see a nest? • Did you see young wild ducks? 	
Explain some of the differences between kokorako houses and duck houses:	<ul style="list-style-type: none"> • Built on the ground • More water provided <p>Bigger fence for walkabout because they eat lots of grass</p>	
How long does it take for duck eggs to hatch?	<ul style="list-style-type: none"> • Wild ducks = 4 weeks • Muscovy ducks = 5 weeks 	
Explain some of the differences between kokorako and duck bodies:	<ul style="list-style-type: none"> • Ducks swim and kokorako don't • Ducks have webbed feet for that and kokorako don't • Ducks have a flatter body to help with swimming • Ducks have more waterproof feathers for swimming 	
7. Explain how you should catch and carry a duck. What are the reasons for this?		
Point out where the oil nipple is on the duck		
Demonstrate how you catch and carry ducks		
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CARE AND MANAGEMENT

LESSON – WHAT IS WRONG WITH VILLAGE KOKORAKO?

It is important for you to understand that there are two very different answers to this question:

- Many Pacific Islanders think there is nothing at all wrong with their village chickens. The chickens do not seem to need any care at all; they find their own food and look after themselves. This belief may be because of traditions going back many centuries when the first wild jungle fowl (chickens) were brought in the canoes with the early human migrations and the chickens have lived with the people since that time.
- Some Europeans think there are two main things wrong with village chickens. They do not produce as many eggs or good meat as they should and they believe this is caused by lack of care for the chickens.

Village kokorako need:

- Good feed every day and
- A house to keep them, their eggs and young chickens safe.

Kokorako are a very important source of food and should be adopted as part of your family so they are given just as much care as your own family.

Feeding, breeding and housing are covered in other sections but the full-time care and management of kokorako in the Solomons is the most important activity to improve the production from these valuable birds.

Rat control will be a major problem because of the lush undergrowth in most island areas. The only solutions to this problem will be the removal of all rubbish and bush near the pens and the use of poultry friendly dogs and cats to catch the rats.

Do not over feed the poultry and remove uneaten food at the end of the day so rats won't be encouraged to visit at night.

Dogs, cats, hawks and snakes can be a problem for kokorako but the people will usually be made aware of such predators by the noise of the poultry. The villagers need to make sure that there is always someone left in charge of the poultry when the people are away working in the gardens etc.

LESSON – SOUNDS OF THE KOKORAKO

Listen to the sounds kokorako make during the day and learn what they mean. You will then be able to care for them better when you understand what they are saying.

Spend time near a kokorako house and ask the students to identify the different sounds and reasons for the sound that kokorako make.

What sounds are made when the hen is happy?	
What sound does she make when she is calling her baby chickens?	
What sound does the rooster make in the morning?	
What sounds do the kokorako make when there is danger?	
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Always listen for the sounds that the kokorako make so that you know they are happy and safe.

LESSON – GOOD HEALTH FOR YOUR KOKORAKO

Disease control by imported medications and vaccines costs too much for most villagers so you should concentrate on proper care and feeding of the poultry. The only other solution is to breed all your replacement kokorako from your own flock and try not to bring in new kokorako which might carry disease or be too weak to resist the diseases your kokorako are used to.

Natural bush medicines presently used by the people should also be investigated for applications to poultry health. As the breeding development proposal is extended over wider areas the investigation of the applications of these bush medicines will become an important part of the improvement ideas.

Many island villages are located close to lagoons or beaches so good drainage should be possible through the sandy soil. If the floor of the kokorako house is wet and muddy you need to cover it with gravel so sickness and disease does not hide in the floor.

Drains should be dug around the houses to stop flooding and floors should be made from gravel material to help drainage and drying out especially in duck houses.

The floor of the poultry houses should be cleaned regularly and the manure and other material placed on the compost heap for later use on the gardens.

Avoid overcrowding in the kokorako houses, which can also cause illness and cannibalism

Attention should be paid to the size of the poultry houses and yards to ensure there is no overcrowding and the ground around these facilities does not become stale and unhealthy.

If you let the kokorako free range after midday each day they should remain healthy. This is not necessary every day if you have good clean and safe house for your kokorako and feed them well.

It is very important to learn that correct feeding as set out in a separate section the main part of the good health of your kokorako.

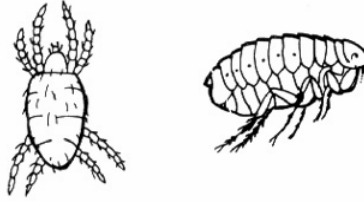
LESSON - COMMON INSECT PESTS IN CHICKENS

NEEDS: Catch two or three adult kokorako near their house.

DEMONSTRATE how and where you search the kokorako's body and house for signs of lice and mite.

Check the rear end of the kokorako around the vent, which is the most likely place where you will find lice or their eggs.

Check in the cracks of the kokorako house especially around the perches or roosts for mite.



Mite and hen flea

The mite lives in cracks and crevices of the kokorako house especially close to or on the roost or perch. It then moves out at night onto each chicken to feast on its blood.

The flea lives in the grass and soil surrounding the kokorako house.

Lice are another pest, which lives on the body of the kokorako especially around their backside where it is warm and moist.



The hen tries to remove these pest by taking a dust bath every day

Sometimes it is necessary to use medicated powder or sprays to get rid of the insect pests. These are imported medicines and very expensive.

Perhaps you can think of a bush medicine, which can do this job



LESSON - MANAGEMENT OF KOKORAKO

Wing cutting and feathers

NEEDS: One kokorako for each student so they can learn to cut wings properly. Several pairs of scissors.

DEMONSTRATE by using a live hen or rooster to explain the different feathers on the body and what they are used for.

Kokorako have four main types of feathers:

Flying feathers – because a kokorako is a bird it needs feathers so it can fly. The feathers on the wings are divided into different sections. Explain those sections during the wing-cutting lesson.

Body feathers- these are just like our clothes keeping their bodies covered to protect the kokorako from weather and damage as they move around.

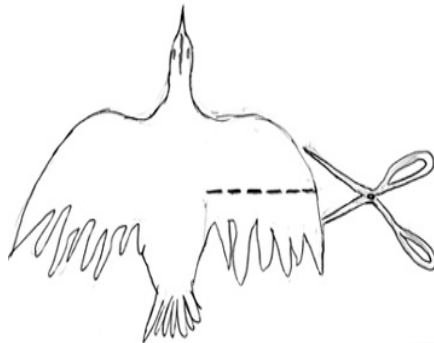
Down – this is the smaller softer feathers underneath the other feathers and this helps keep the body insulated from heat, cold and wet.

Pinfeathers – these are the start of new feathers and can be seen at any time on the kokorako body because as feathers fall out the kokorako starts to replace them with new feathers.

Wing cutting may be necessary to keep your kokorako from flying away outside your house or yard.

DEMONSTRATE how you should be careful that you only cut some of the flight feathers from **one wing only** so that then throws the chicken off balance if it tries to fly.

EXPLAIN how the make up of the wing feathers helps the kokorako fly and why the cutting of one part of the wing helps stop flying.



Be careful to stretch out the wing before you cut it so you don't damage the bones of the wing.

LESSON - MARKING BREEDING KOKORAKO

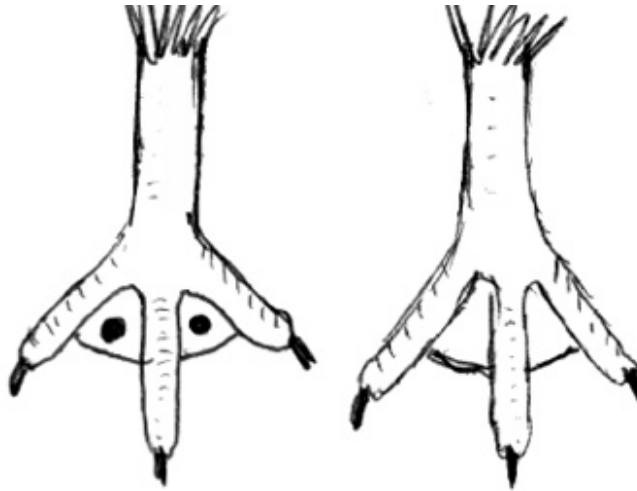
Toe marking is a very easy to use to help you identify any specially bred chickens as they grow

NEEDS: Two or three kokorako which haven't been marked.

If you are breeding a lot of kokorako you might like to mark the baby chickens as they hatch so you can tell the different parents or breeding of these babies.

DEMONSTRATE how this is usually done by punching a hole in the webbing of the chicken's foot or the web can actually be cut through with a knife or pair of sharp scissors.

They will bleed a little but the cut will soon heal.



You can punch holes in the web of a chicken's foot with a special tool in various patterns to help identify each bird or if you don't have the right tool to punch holes then the web can be cut with scissors or a knife



LESSON – CATCHING AND CARRYING KOKORAKO

ASK each student to attempt to catch a kokorako. Then explain how it is done properly.

It is often necessary to catch and handle your chickens to examine them or move them from house to house.

Firstly a net on a pole is the easiest way to catch the kokorako out in the open. If they are sleeping in the trees near your village you have to wait until it is dark to catch them.

DEMONSTRATE how you can carry the chickens by their feet but their wings will flap and they might struggle hurting themselves.



NO



YES

A better way to carry them is under your arm so you can hold the legs but also keep the wings from flapping. Make sure you face the rear of the chicken away from you so that it doesn't drop manure on your clothes.

TAMING - If you want to manage your kokorako well you need to visit them regularly throughout each day to check that all is well. The more they see you the quieter they will become especially if at each visit you offer the kokorako small pieces of special food or vegetable scraps, soaked grain, kitchen scraps, fish scraps or garden leftovers.

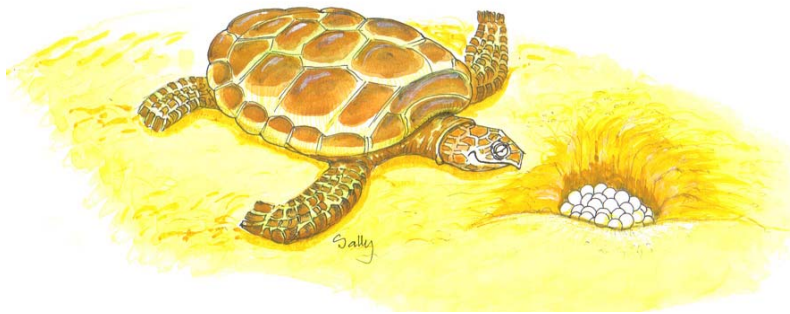
Avoid overcrowding in each house by following the recommended measurements as set out in the Housing section of these lessons.

LESSON - BUSH MEDICINES

As imported medicines are difficult and expensive to obtain you need to firstly make sure your kokorako are kept healthy with good food and housing. Even if you do this they still might get sick or have insect pests.

DISCUSS how you can try the traditional bush medicines used for people for some of the kokorako problems.

LESSON - PRESERVE WILDLIFE



People require protein to help give them a healthy diet and many wild animals are used to provide this protein. Unfortunately the rare and valuable wildlife of the Solomons is also threatened and needs to be preserved so this is another important reason to eat chicken instead.

DISCUSS how this idea will be accepted and introduced in each community.

What wildlife is still taken from the bush, sea or river now and can it be replaced by using kokorako?

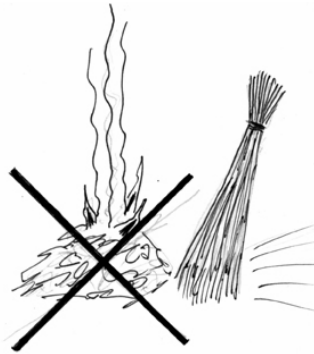
DISCUSS what the older people in the village say about the wildlife in their time and now.

LESSON – COMPOST

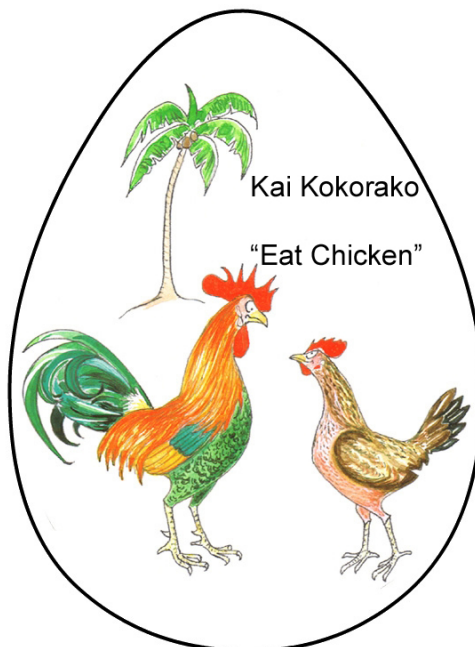
DISCUSS this subject in a garden location so that the soil and other benefits can be demonstrated.

Also discuss how the recycling of garden waste through the floor of the kokorako house has extra benefits. As you weed your garden throw the weeds into the kokorako house.

Most Solomon Islanders like to keep their villages clean and tidy and sweep the fallen leaves and branches each day. Another good way to preserve our environment is to place the leaves and branches inside the kokorako house so they can scratch and also take insects etc from the leaves rather than burning them.



The old leaves and branches mixes with the kokorako manure on the floor of the house. This can then be cleaned from the floor every four days and placed in heaps until it breaks down more to use on different parts of the garden.



LESSON – CARE & MANAGEMENT

EVERYDAY WORK ACTIVITIES	
Early morning	
Give the kokorako their food for the day	
Make sure they all have fresh drinking water	
Check kokorako nests for eggs. Make sure the nests have plenty of soft material like rotted wood, dry grass and sand for the hens to lay in.	
Mid afternoon	
Collect all the eggs and allow the kokorako to run out free in their grassed yard	
Provide fresh greenfood to those kokorako which can't be let run free in yards	
Evening	
Make sure all kokorako have clean drinking water	
Shut them all safely in their houses for the night	
Collect any late eggs from the nests so rats don't steal them during the night	
Make sure there is no food left in the houses which will encourage rats to come at night.	
Watch for any broody hens, which want to sleep on their nest instead of the perch or roost.	
Night time	
This is the best time to catch any kokorako you want to move to another house or if you want to move a broody hen to her nest of eggs that you have ready	
During every day you should always be checking at different times that your kokorako are healthy and happy	
Make sure they are not sick or fighting	
It will help to tame them if you offer small amounts of special food like weeds from your garden or a sprinkling of cracked grain each time you visit the kokorako.	
Make sure that drinking water is not spilt or made too dirty to drink by scratching fowls.	
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LESSON - KILLING CHICKENS	
	What we will use (MATERIALS AND NEEDS)
Demonstrate how to kill chickens cleanly so that it is healthy food for you	Some different kokorako to kill, an axe, a sharp knife, two clean buckets, one with hot water, one with clean cold water, a clean table to work on and a clean or bag to hold the birds after killing.
When you need to kill a chicken for food the best way is to hold the head carefully as demonstrated and pull slowly until you feel the neck breaks and the bird go limp.	
If the rooster is too large to do this then you need to chop of the head of the bird with an axe. There will be a lot of blood from this method so you need to have a bucket or basket ready to drop the bird into so it does jump around the village making a mess and spoiling its body for eating.	
When the kokorako stops moving after being killed plunge its body into the hot water and leave it for a few minutes. All feathers can then be plucked easily from the bird's body.	
Demonstrate how to carefully remove the innards from the fowl describing the parts	
Wash the carcass in the clean cold water and cover it with a clean calico to keep the flies away.	
Discuss how the chicken carcass can be cut up and the many different ways it can be cooked.	
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REVISION – CARE AND MANAGEMENT	
1. Review the “What is wrong” page	
2. Explain what important sounds your kokorako make for: <ul style="list-style-type: none"> • frightened • laying eggs • calling others 	
Where do you look on the kokorako's body for insect pests?	
How do you catch a kokorako?	
Why is it important that you have quiet tame kokorako?	<ul style="list-style-type: none"> • easier to handle for breeding and management • less stress and happier kokorako •
How to you help train them this way?	
How do you hold and carry a kokorako?	
How do you cut the wing of a kokorako?	
9. How do you measure the area needed for kokorako rooms?	
What problems are caused if kokorako are too crowded in their house? <ul style="list-style-type: none"> • Sickness • Fighting • Cannibalism • Poor breeding • Broken eggs 	
11. Why do you clean the floor of the kokorako house every four days and replace the grass there?	
What do you do with that waste from the floor?	
Review the “Everyday activities” list	
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CULLING

This is an important part of your care and management duties when keeping kokorako or ducks.

The word “culling” means selecting unwanted chickens or ducks from a group to sell or kill. It also means to take out unsuitable roosters or hens from a breeding flock.

Culled chickens or ducks are not rubbish.

They can be still good quality they might be just more than you need yourself. Or you could be culling the kokorako to eat for yourself so then you are selecting the biggest and best eating bird.

Your breeding rooster might be culled or taken out of the breeding group because he is not a big success as a breeder.

The rooster might just be culled because you have a better one or a different breed to replace him.

Culling can start from an early age when you start to notice faults or problems with growing chickens or ducklings.

You can also cull surplus males from growing chickens because they are bigger than their brothers and sisters so they take more feed.

When your birds are looking sick or unfit they can also be culled.



Before you plan to cull any chickens or ducks you should be prepared for where they are going to.

- Do you have spare houses or rooms to keep these culled birds?
- Is there someone ready to buy them?
- Do you have cages to transport the culled birds?
- Do you know how to dispose of sick or dead kokorako when you cull them?
- Do you have the correct tools and equipment to kill kokorako to eat?

HATCHING EGGS

Another one of the most important points for successful improvement of village chicken keeping is to hatch and rear lots of good quality baby chickens

The best way to do this is naturally with good broody hens but if you have electricity and can afford to buy electric incubators then it can also be done artificially.

To start with you must have good quality fresh breeding eggs. By keeping your hens in a suitable house for most of the day and feeding them properly their eggs will all be laid there so they are safe and easy to collect.

DISCUSS Collecting and storing eggs ready to hatch.

LESSON – NESTS

Once you have arranged good breeding groups the next important thing to do is check the nest that the hen has chosen to lay her egg in.

THINK about where you have found eggs, which have been laid around the village. They were probably hidden in a tree hollow, under a big bush or inside your house.



Proper nests need to be provided inside the kokorako house so the hens will lay their eggs there.

The hen likes a dark private place to lay and hide her eggs but it is also a good idea that other hens cannot watch the hen lay because the other hen may break and eat the egg.

Make sure the nest has soft material like rotted wood, dry grass and sand for the hens to lay in.

DEMONSTRATE the type of nest to be provided and where to locate it inside the kokorako house.

IMPROVED VILLAGE POULTRY KEEPING

A nest made of bush materials is a good idea because it feels natural for the village hen. Imported hens will like it too because it can be made dark and placed in a quiet corner of the house. The nest should have a top on it not open boxes like some people believe imported hens use.

You only need one or two nests for up to 10 hens because the hens will all like to lay in the same nest anyway.



This hen hatched her chickens in a biscuit carton under a house at Silolo North Malaita

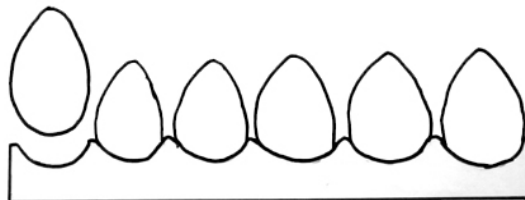
LESSON - EXPLAIN ABOUT STORAGE OF EGGS

Once you have arranged for suitable nests for your hens then you need to make sure the eggs are collected each day and stored properly in your own house. If you take the eggs away each day this will help slow the hens from going broody. Broody means that when the hen feels she has reached the end of her clutch length and would like to sit on the eggs to hatch them.

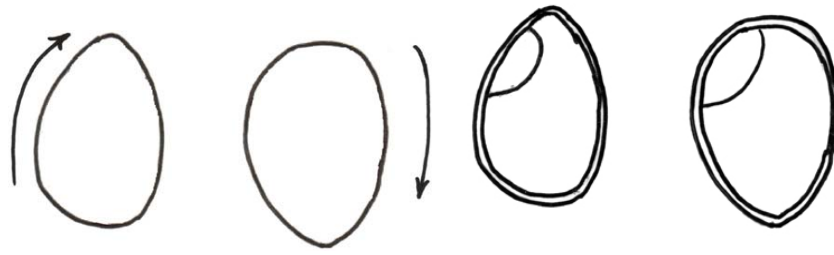
Eggs should always be stored in a cool part of your house away from where they can be broken or stolen by rats.

MAKING EGG CARRIERS/STORAGE

LESSON – DEMONSTRATE how egg containers can be made from woven leaves or sago wood.



When storing eggs you need to turn them over at least twice a day so that the air sac inside the egg does not stick to the inside of the shell and stop the chicken from hatching



The eggs should be turned end to end twice a day in their storage container

LESSON - DEVELOPMENT OF A HATCHING EGG

EXPLAIN that when you are artificially hatching eggs you need to check the eggs after two weeks incubation to make sure the chicken is developing. This can be done by passing the egg over a bright light like a strong torch, at night, which shows the inside of the egg.

EXPLAIN that all “clear” and bad eggs from this need to be thrown away to leave the good eggs space to hatch properly in a clean incubator.

LESSON - ARTIFICIAL HATCHING OF EGGS

For artificial hatching of eggs a special machine called an incubator is needed. A good regular electricity supply is also needed to keep the eggs for the three weeks before hatching.

Besides a reliable electricity supply the other important thing with incubators is that they are always kept clean inside especially when eggs are hatching and there are egg chips and dusty down from the hatching chickens.

A disease can also develop if the incubator is not kept clean and this will kill the chickens growing inside the egg.

Incubators are made to copy how the hen incubates the eggs. This means that she sits on the nest and warms the eggs with her body heat. The incubator is specially made to keep this same heat inside.

The hen then keeps turning the eggs over and over and moves them around in the nest under her so that they are all kept at the right temperature.

When we manage an incubator full of eggs we also need to turn and move the eggs regularly to make sure they hatch properly. This moving and turning of the eggs should stop three days before the eggs are due to hatch.

Even though the mother hen is turning and moving the eggs about every twenty minutes every day we do not need to do the same.

We should do this at least four times a day.



The eggs in this incubator are marked on one side so it will show which side has been turned.

DEMONSTRATE the proper egg turning procedure also explaining about not allowing the eggs to cool too much.



The hen will leave her nest quickly once a day to eat and drink and she will usually do this in the middle of the day so her eggs don't get cold.

REMIND everyone that the turning of the eggs is not necessary after the eighteenth day of incubation. The good eggs should be left undisturbed in the incubator until they hatch on the twenty-first day.

LESSON – ARTIFICIAL BROODING CHICKENS

GET READY for the hatching chickens by preparing a small warm dry house (called a brooder). This is necessary when you artificially hatch chickens because you are replacing the work that a mother hen normally does naturally.

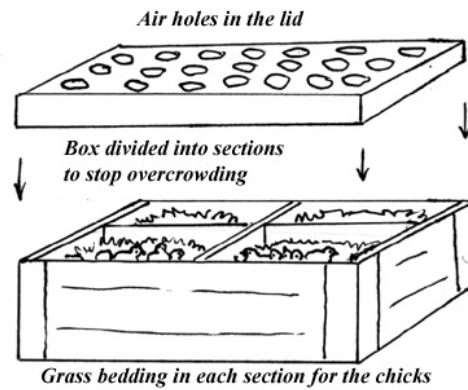
You will need some sort of light and heating to keep the chickens warm at night. If you have electricity then a normal light bulb will do. If you don't have electricity then a kerosene lantern is needed.

If these are not available then a small box with lots of grass inside can be used to keep the chickens in at night. A lid with breathing holes in it can be placed on the top. This is called cold brooding.

The chickens can be kept in a small house in the sun during the day to keep them warm like their natural mother would.

When cold brooding the box should be divided into sections. Only a few chickens are kept in each section for the first two weeks until they are stronger. This stops them overcrowding and killing themselves when they are weak and newly hatched.

IMPROVED VILLAGE POULTRY KEEPING



A clean box with grass inside can be used as a “cold” brooder or if you have electricity a normal light can be used.

EXPLAIN that you should not “help” the chickens break out of their eggs. All you should do is remove the broken shells a few times during the day that the eggs hatch so that they don’t cover the eggs still hatching.

EXPLAIN that as the chickens dry out from hatching you should place them into the brooder under the light or lantern with just a shallow dish of water to drink.

REMEMBER to be careful that the dish is not very deep so the chickens can reach the water and also not drown.

They will not need feeding for another whole day because there is still food inside their bodies from inside the egg.

ARTIFICIAL BROODING OF CHICKENS

Different types of artificial brooders can be used.



A kerosene lantern can be used to artificially brood the chickens for the first three weeks of their life. This is used through the nighttime when it is cooler. Chickens can be kept in the sun during the day.

After three or four weeks in a brooder the chickens should have enough feathers to keep themselves warm if they are still kept in a weatherproof house.

The room in the kokorako house for growing chickens should be weatherproof and dry plus keep out dogs, cats and pigs.

IMPROVED VILLAGE POULTRY KEEPING CARRYING BABY CHICKENS



Baby chickens need to be held and carried very carefully

DISCUSS HOW baby chickens should be handled carefully. Also that regular handling will keep them quiet as they grow.

It is a good thing that the children play with the chickens for parts of the day as long as they carry them carefully. It will help to tame your kokorako and make their management easier.

REVISION – INCUBATION AND HATCHING	
What does it mean if a hen is broody?	
1. How long does it take to hatch eggs?	
2. How long does it take to hatch eggs?	
3. Can you put a mixture of eggs from different hens under a broody hen?	
4. How many eggs can one hen sit on?	
5. How do you store eggs each day?	
6. What are main things you need to do to make a good nest for your kokorako?	<ul style="list-style-type: none"> • make it dark and private • plenty of soft material on the floor of the nest all the time • put the nest close to the door of the room so eggs can be collected easily and broody hens can be organised better

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HOUSING FOR GROWING CHICKENS

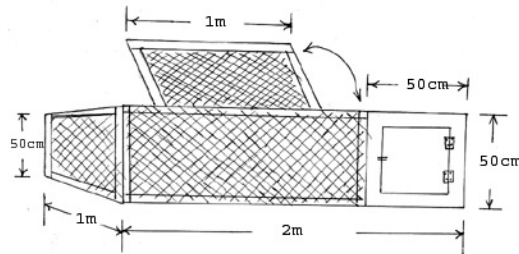
One of the most important parts of successful caring for baby chickens is the way in which they are kept in a house or small cage.

This provides warmth, protection from weather and also cats, rats, dogs, hawks and snakes.

The place where the babies are kept at night as well as the day time one both need to keep them safe from all these things.

The size of the cage depends on how many chickens are kept. You need to allow for enough space for them to grow and as they need to be protected from rats especially until the chickens are 15 weeks of age. Extra cages with rat protection need to be available to move the chickens to, as they grow too big for the first cage.

The cage needs to be covered all over with wire netting, which is small enough to stop rats from killing them. A separate part of the cage needs to be kept for the light or lantern or to keep the babies all together to sleep for about six weeks.



The rest of the cage needs to be covered with a roof for weather and up off the ground or with surrounding protection to stop dogs and pigs from killing the baby chickens.

For example 50 chickens can be kept in a cage 1m x 2m x half a metre high until they are about 3 or 4 weeks old. After that you need another cage the same size so that the chickens can be divided into half each to the two cages.

Two more cages the same size need to be provided after another three weeks to divide the chickens into four groups to give them room to grow.

It is too difficult and expensive to provide rat proof cages in really big size houses so that is why it is necessary to use several smaller cages instead.

The floor of the cage can either be made of wire netting and allow the manure to drop to the ground or of solid material like timber with grass or sand on the floor. If material is used on the floor then it needs to be kept clean and dry. It will need to be changed once a week with fresh material.



FEEDING BABY CHICKENS

If you are hatching the chickens in an incubator or importing them you will need to also supply imported baby chicken feed for the first six weeks to make sure the chickens stay healthy. It is important that this chick feed is specially medicated against coccidiosis which is the most threatening disease for young chickens in the Solomon Islands. At the same time you should be prepared to mix the imported feed with local feed from your garden. This will help reduce the cost of the imported feed and prepare the baby chickens to use the local feeds more as they grow.

The feed needs to be provided fresh every day with just enough for the chicken's needs so that it is not wasted or left on the floor to encourage rats to come looking.

Fresh water should be provided in suitable containers not too deep to allow chickens to drown. Some stones can be placed in deeper bowls so that the chickens don't get wet.



RATS

These are the biggest problem for anyone who wants to raise chickens without a hen is rats. In overseas farms it is possible to build special houses for chickens and poison any rats but in the tropical environment of the Solomons it is very difficult and expensive to keep rats away from baby chickens.

It is necessary to protect the chickens for at least twelve weeks, even longer, after they hatch so that rats cannot kill them. If you allow the rats to kill the chickens then you are wasting money, which was used to hatch or import the chickens plus the care and feeding which is given to the chickens before they are lost.

WEATHER

Baby chickens need to also be protected from rain and hot sun. This means that a roof should be built over the top of the cage or a special house built so that a few cages can be kept inside. The house needs to be built in such a way that it allows the sun to come into the house onto the cages in the mornings to help keep the chickens warm and healthy. The house also needs to have walls, which will keep out dogs and pigs. People who care for baby chickens also need to always be available to make sure that cats and snakes do not visit the chickens and kill them.

Successful chicken keeping needs a proper commitment by interested people who have a "feeling" for them and they must be "in touch" with the needs and well being of their chickens.

This means that the people really care about the chickens and are interested in their everyday lives and are prepared to work hard to care for the chickens.



BROODY HENS

At present a village hen may be lucky enough to hide a clutch of eggs for the full twenty-one days required to hatch them. Afterwards when she emerges from her hiding place with her chicks searching for a feed for them they may fall prey to predators such as cats, dogs or hawks or die from disease or lack of food.

Mostly it is the shortage of suitable chicken feed, which causes the chicks die of starvation.

Two simple changes are all that is needed to ensure a better result.

1. Keep the poultry in predator proof yards or on a small island away from these threatening animals.
2. Secondly provide fresh drinking water each day in shallow bowls for the chickens when they hatch as well as grated coconut, vegetables and cooked egg for the chickens.

BROODY HENS – CARE AND MANAGEMENT

To make sure of successful increases in the number of chickens try and manage the hens, which are incubating eggs. If your poultry is kept in yards and special poultry houses you can control their mating, collection of eggs, feeding plus protect them from the weather and predators.

The care and management of broody hens is a very important part of village poultry keeping because to be successful you need to hatch and grow lots of baby chickens.

It is only through regular hatching that the project can be sustainable.

This means that you need a good sized flock of suitable hens for broodies to hatch the eggs and also as mothers to successfully raise all the chickens hatched.

IMPROVED VILLAGE POULTRY KEEPING

Some hens are more suited to laying eggs and others are better to be used as broody hens.

You will be able to select your broody hens from experience of which ones are the best mothers. You can then also hatch eggs from those good broody hens to provide more broodies for the future.

As village and jungle fowl are included in this upgrade proposal for their hardiness and natural abilities the development program for small communities relies on natural incubation of eggs and raising of chickens.

LESSON – BROODY HENS

EXPLAIN how you can recognise a broody hen because she wants to sit on the nest all day and night. She will also complain when you try to take eggs from underneath her.

If you confine your poultry to pens until midday each day, collect your eggs and store them until hens go broody you can then arrange to set hens at a time you control.

One of the most important lessons to learn about keeping village kokorako is the care and management of broody hens. You should work towards raising a small flock of a few hens, which are reliable sitters, and good mothers of their chickens.



The hens should also be tame and be easy to handle right through the egg hatching and chicken raising time.

EXPLAIN that a broody hen does not have to use its own eggs to hatch. You can collect your eggs from different hens and mix them together. Each hen will accept any chickens she hatches as her own. It does not matter that each chicken might be a different colour. This is helpful because you can use your broody hen to hatch special eggs, even duck eggs if she is well trained and quiet.



The mother hen and chickens can be fed and protected in a moveable pen for the first six to eight weeks to ensure the survival of the chicks.

Once they reach this age the chickens should be partly feathered and fairly self-reliant. Their mother can then be taken from them and returned to the breeding pen and you can raise the chickens by hand. This will also help keep the chickens tame because they are being handled by their carers every day. The chickens can be moved to a larger growing pen still protected from the weather and predators.

As they grow the chickens can then be separated again at about twelve to fifteen weeks into male and female so they can then be given their particular feed requirements. That is to suit young laying birds or to fatten the roosters to eat later.

MULTIPLE BROODY HENS

A special way of hatching a lot of chickens quickly is to organise your broody hens so that two or three or more a set at the same time so then the chickens will all hatch at the same time.

This means each hen will have more chickens and that you will get more chickens hatched at the same time.

Allow your broody hens to continue sitting on their nests with only a spare egg under them. You should still collect the freshly laid eggs every day and store them ready to put under broody hens.

When you have two or three broody hens ready to sit on the eggs make sure the broodies have a small room of their own for each nest.

Then place eggs under each hen at the same time. It is best to do this at night so you don't disturb the hens too much. This will mean that all the broody hens will hatch their eggs at the same time.

IMPROVED VILLAGE POULTRY KEEPING

If your broody hens are tame and not too wild you can then remove the hatching chickens in the first day or two of hatching from under each hen and put them all under just one of the hatching hens.

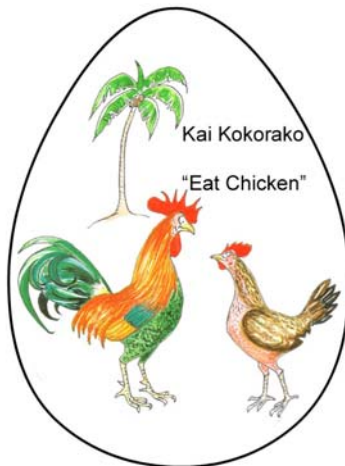
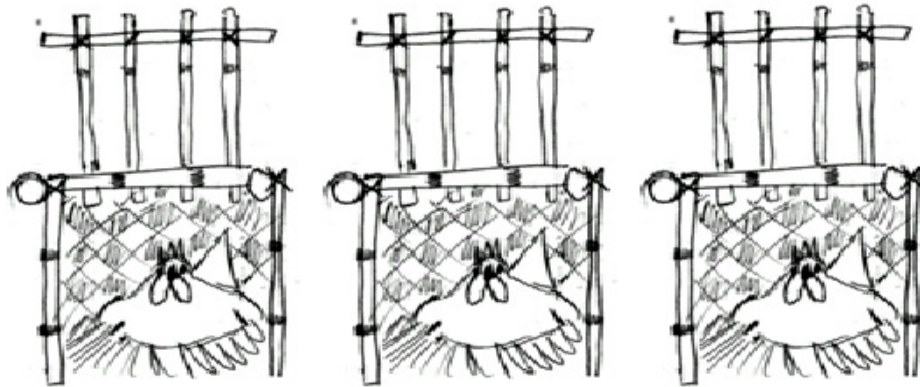
When all the chickens have hatched then replace the chickens with a new setting of eggs for each hen and repeat the process.

This system can be used two or three times without harming your hens. You will be surprised just how many baby chickens one hen can care for.

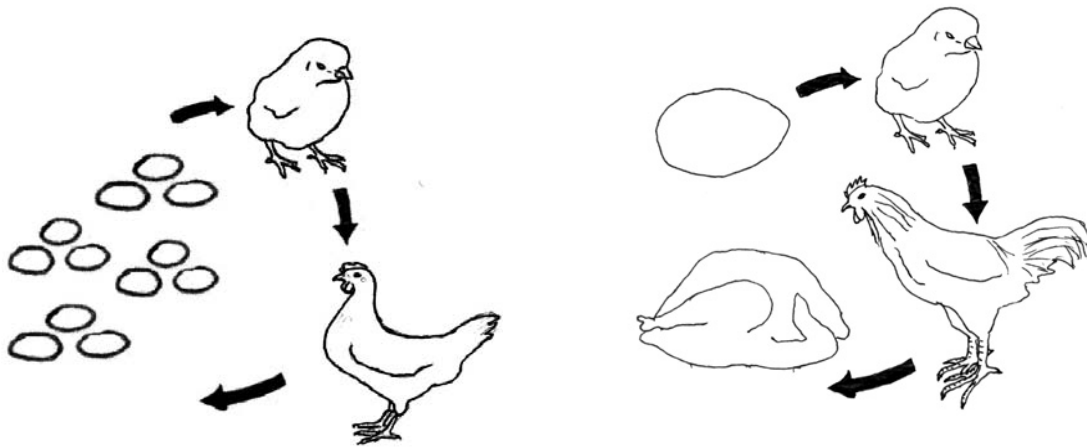
EXPLAIN that setting eggs, moving broody hens and moving newly hatched chickens should be best done at night so the hens are not disturbed too much.

REMIND STUDENTS the importance of quiet hens as the main thing, which makes this system successful.

REVISE to ensure this method is fully understood.



SMALL SCALE COMMERCIAL CHICKEN FARMING

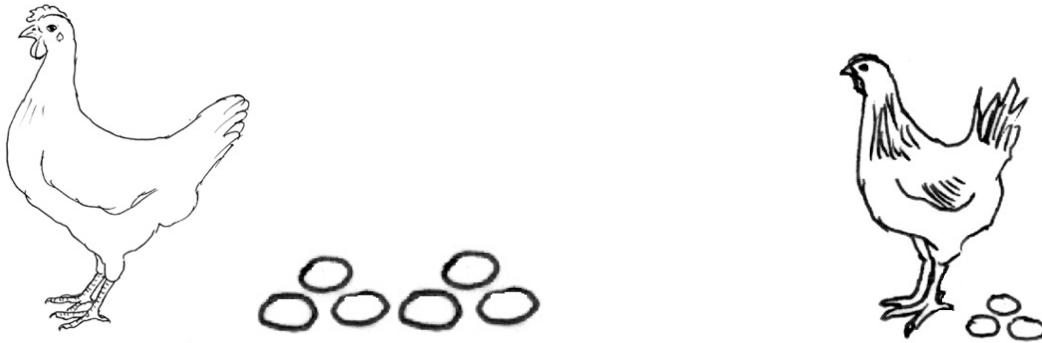


Village chicken projects meet the needs of most villagers but some people might be interested in starting small-scale commercial or imported chicken businesses.

This means that money will be needed to buy the chickens and special imported feed for them to start the project and to keep it going.

It will depend on how many chickens are planned to be kept and where you need to obtain your chickens and feed supplies from.

IMPORTED LAYERS

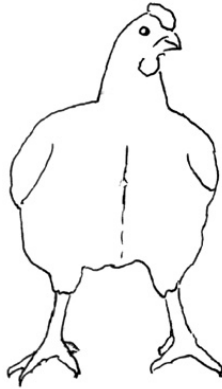


If village hens are cared for properly they will lay a lot more eggs. Imported hens are bigger and can lay more eggs but they must be fed good feed.

If you keep a lot of layers together in the one house you will need to provide a lot of nests for these kokorako.

All nests for both village and imported layers should have a little sand or gravel in the bottom of the nest plus clean dry grass on top of the sand. This makes a nice comfortable nest for the hen, keeps the egg clean and stops it breaking.

MEAT CHICKENS OR BROILERS

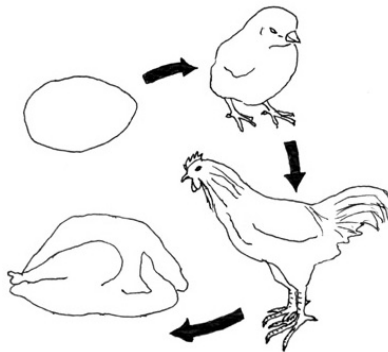


There are specially bred chickens available, which grow quickly into meat chickens. They need special houses and feeding to grow like this.

FEEDING MEAT CHICKENS

Spare male village chickens can also be kept in small separate cages and fed different foods to young layers so they fatten into good meat chickens. Refer to the pages on feeding to see what different diet the village meat chickens need.

Your imported meat chickens will grow well on imported feeds but local feeds should also be given to help them grow and to replace some of the expensive imported feed.



You need to plan your meat chicken keeping very well. It takes a baby meat chicken 8 or 9 weeks to grow big enough to eat so you need to plan to have both enough chickens supplied and houses for them all so you can continue.

BREEDING FARM

Another good poultry keeping opportunity in the Solomons is to concentrate your business on breeding lots of kokorako or ducks for sale in the markets as baby ducklings or chickens, half grown breeding stock, layers or meat chickens. You can still follow the instructions for keeping village poultry but you will need more houses and plenty of rooms to grow your breeding flock.

IMPROVED VILLAGE POULTRY KEEPING

These breeds could be purebred Naked Neck chickens which are needed in large numbers to improve the quality of village chickens. These Naked Necks are well suited to the climate of the Solomons and should be the main breed of chicken which is used in improvement projects.



Naked Neck chickens

Or it could be just keeping pure bred St Cruz chickens in captivity so that breed is not lost.

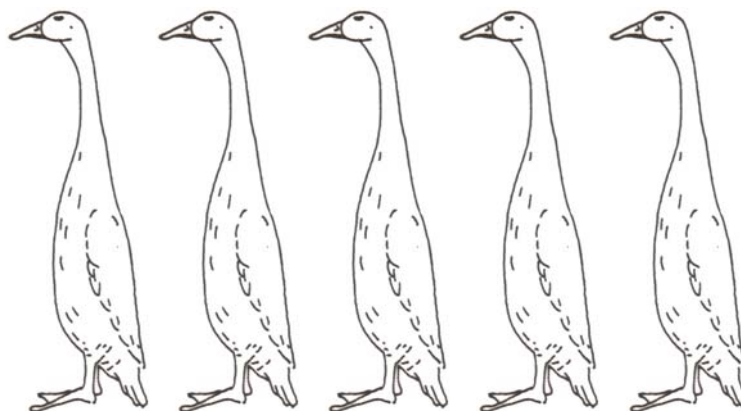
Ducks too are in short supply in the Solomons so specialist duck breeders are needed to build up the numbers of ducks in the country and maintain breeding flocks so that ducks can always be available for people to start projects with.

The only duck available at the moment is the Muscovy but more of them are needed in the Solomons to improve their breeding quality.

There is another valuable breed of duck which should also be imported and established in breeding farms.

This is called the Indian Runner duck which is smaller than the Muscovy but a better egg layer. It can be kept just for eggs but also it is well suited to eating insects in vegetable gardens.

As it is a smaller duck and does not damage the vegetable plants it is better suited than muscovies.



Indian Runner ducks

You will need to read the separate booklets on keeping ducks or special breeds of chicken to succeed as a specialist breeder.

If you concentrate on breeding good quality specialist poultry then you will be able to ask higher prices for that quality but still have enough eggs and meat to eat yourself.

HOUSING

Local materials can be used to house your imported layers or meat chickens but you will need to allow extra floor space or bigger houses if you plan to keep bigger numbers of kokorako.

Meat chickens will lose weight if they are allowed to walk about too much so they need to be kept in their houses for most of the day.

Layers need to be kept in bigger numbers than village kokorako if you plan to sell lots of eggs. Their houses need extra space for each layer because they also have to be kept inside the house for most of the day.

If you have large numbers of layers will also need lots more space outside for walkabout in the afternoon and you might need to build a big fence around the area to keep them safe.

Imported or permanent materials can also be used for the houses if you have the money to do this. You should always use a leaf roof though because a tin roof will be too hot for the kokorako.

If you keep imported layers or meat chickens then you should build their houses off the ground so that air will circulate under the kokorako to help keep them cool.

Kokorako houses made of local materials are strong and allow air to cool the kokorako inside. Floors can be made of betel nut or pandanus timber with spaces between the flooring. These spaces allow air to circulate and droppings to fall to the ground. Permanent material like steel mesh can also be used but it will cost money.

Imported chickens need food and water with them all day to help them grow

quickly. Special feeders and waterers might have to be purchased to do hold the

imported feed. Local containers such as bamboo can be used for the local feeds

you give the kokorako.

CARE AND MANAGEMENT OF COMMERCIAL KOKORAKO

The same lessons, which can be learnt from caring for village chickens, can be used for imported ones.

Diseases can happen more often with imported chickens because they are not used to living conditions in the Solomon Islands. Usually a lot more imported chickens are kept close together so disease spreads quickly so more care is needed for them.

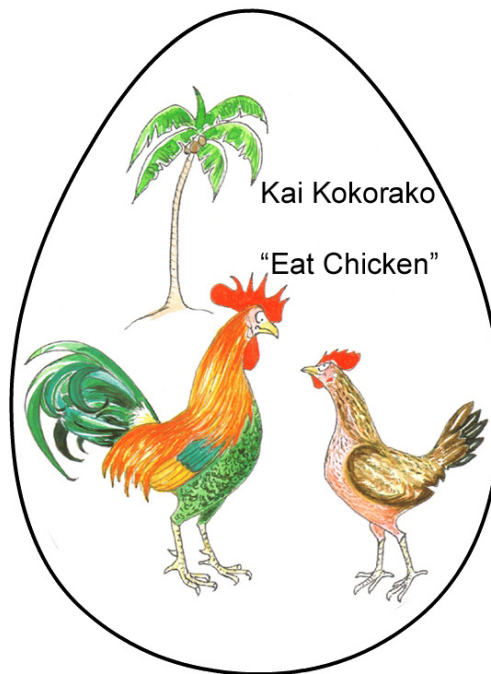
If you are keeping imported chickens you might also need to provide special feed and water containers for them and also build a more permanent house for the growing chickens. This all means that more money will need to be spent to start the business.

The imported layer and meat chickens are specially bred to grown quickly and produce eggs or meat. This also means that the chickens need to be fed imported feed specially made to suit the layers or meat chickens.

You can calculate how much money is needed by referring to the “Planning and Record Keeping” section of this book.

Other plans you will need to make to start the imported chicken business are:

- How and where you will sell them as they grow?
- How will you manage the business to make sure it continues successfully?



PLANNING AND RECORD KEEPING

Small scale imported chicken businesses are suitable to set up in many parts of the Solomon Islands.

They can be started near large communities or towns, in schools and colleges or where ever you can see a good market to help you sell the chickens when they grow.

The most important thing you should do is make a plan for your chicken business to make sure you can answer the following questions:

LESSON - PLANNING A KOKORAKO BUSINESS	
1. Do I have the training and knowledge to carry out this business successfully?	
2. If not where can I get this training and how much will it cost me?	
3. Is chicken keeping suitable for my location?	
4. Will there be a better market for layers and eggs or meat chickens?	
5. How many chickens will I need to start with?	
6. Is it easy and affordable for me to obtain chickens and feed to get the business started and to keep it going?	
7. How much money do I need to start and then to keep my business going successfully?	
8. How will I get the money needed to start my business?	
9. Will I be able to sell my layers, eggs and meat chickens when they have finished growing?	
10. How will I know if I am successful and what my profit is?	
11. Where will I keep the chickens?	
12. Do I have enough land available?	
13. Can I build a suitable house for my chickens?	
14. Will there be a supply of imported feed regularly available?	
15. Where will I store my spare feed? Can I afford to keep extra feed?	
16. Are there local garden foods available for the chickens?	
17. Can I keep simple records for my business to help make it successful?	
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PREPARE YOUR OWN PLAN to answer all these questions for your business

LESSON - COSTING AND BUDGETING

There are two kinds of costs Establishment or starting costs and Production costs.

Establishment costs are usually only paid for once at the beginning of the business.

Establishment or startup costs are:

Training

- Attend workshops
- Employ a trainer
- Purchase training books

Market survey

- Travelling to main centres to investigate market opportunities

Land and housing

- Purchase land
- Clearing land
- Establish food gardens
- Building materials for house

Equipment needed

- Feeders and drinkers
- Processing equipment like knives, packaging and carrying crates

If you were planning to just keep layers for eggs then when you first buy the young hens then that cost would also be a startup one. If you were selling eggs and layers then their cost would be a production one.

Production costs:

By using as many local materials, breeding stock and local feeds this will keep your costs down and therefore profits will be bigger.

Chickens

Feed supplies

Helpers

LESSONS - GETTING STARTED

CALCULATING ACTUAL COSTS - LAYERS	\$
Establishment Costs	
Obtain a suitable piece of land	\$
Build a house to suit number of layers planned	\$
A second house to grow replacement layers	\$
Build a fence to keep layers safe	\$
Build a food garden	\$
Kerosene and lanterns to brood chickens	\$
Feeders and drinkers	\$
.....Day old chickens @ \$.....each to start	\$
Supply of chick and grower feed to start	\$
Total establishment costs	\$
Ongoing Costs Layers	
Feed supplies for layers	\$
Egg containers	\$
Replacement chicks	\$
Chick and grower feed for replacements	\$
Kerosene for lanterns	\$
Marketing and selling costs	\$
Total on-going costs	\$
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CALCULATING ACTUAL COSTS – BREEDING FARM	\$
Establishment Costs	
Obtain a suitable piece of land	\$
Build five houses to suit number of breeders planned	\$
Build a fence to keep breeders safe	\$
Build a food garden	\$
Feeders and drinkers	\$
.....Day old chickens @ \$..... each to start	\$
Supply of chick and grower feed to start	\$
..... Breeders to start @ \$.. Each to start	\$
Supply of breeder feed to start	\$
Total establishment costs	\$
Ongoing Costs Breeders	
Feed supplies for breeders	\$
Egg containers	\$
Replacement chicks or breeders	\$
Chick and grower feed for replacements	\$
Marketing and selling costs	\$
Total on-going costs	\$
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CALCULATING ACTUAL COSTS – MEAT CHICKENS OR BROILERS	\$
Establishment Costs	
Obtain a suitable piece of land	\$
Build a house to suit number of broilers planned	\$
Extra houses to grow replacement broilers	\$
Build a slaughterhouse with insect screening for flies	\$
Knives and buckets for killing	\$
Build a fence to keep broilers safe	\$
Build a food garden	\$
Kerosene and lanterns to brood chickens	\$
Feeders and drinkers	\$
.....Day old chickens @ \$.....each to start	\$
Supply of chick and grower feed to start	\$
Total establishment costs	\$
Ongoing Costs Broilers	
Feed supplies for Broilers	\$
Plastic bags and packaging for broilers	\$
Replacement chicks	\$
Chick and grower feed for replacements	\$
Kerosene for lanterns	\$
Marketing and selling costs	\$
Total on-going costs	\$
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LESSON - WORKING OUT A PROFIT OR BOOKKEEPING

You need to work out what your profit is to make sure your business is successful.

To do this you must take your costs away from the income or money you receive for selling eggs or kokorako.

This also means that you need to keep written records of all the money you spend and the sales you make.

RECORD OF COSTS

Remember you have two different lots of costs, production or on-going costs and establishment or setup costs.

You can add up all your production costs and take them away from your income but don't take all the establishment costs off your income.

The establishment costs are a big cost and the items you buy will last a long time so you must spread these costs over that time. First add up all your establishment costs. Then work out how long these things will last e.g. 5 years then divide the total by the number of years.

Then deduct the part of establishment costs from your year's income.

Examples - SALES AND INCOME RECORDS

Date	Description of item purchased	Set up cost	Ongoing cost
	Chickens		\$
	Feed		\$
	House	\$	
	Kerosene		\$
	Lanterns	\$	
	Feeders and drinkers	\$	
	TOTALS	\$	\$

Date	What sold	Eggs	Chickens	Layers	Broilers	Breeders
	4 dozen eggs	\$				
	5 surplus layers			\$		
	10 meat chickens					\$
	Breeding chickens		\$			
	Spare rooster				\$	
	TOTALS	\$	\$	\$	\$	\$

TO CALCULATE PROFIT	\$	\$
Total income or sales for the year		
Eggs	\$	
Layers	\$	
Broilers	\$	
Breeders	\$	
Young chickens	\$	
Training given	\$	
Deduct costs for:		
Total of production or on-going costs		\$
Total of establishment or setup costs \$.... divided by number of years..... they should last		\$
Deduct Total costs From Total income	\$	\$
EQUALS NETT PROFIT	\$	
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IMPROVED VILLAGE POULTRY KEEPING

EGG LAYING RECORD for: Farm Name.....Room No.....					
MONTH	No. of HENS IN ROOM	No. of EGGS LAID		No. of HENS IN ROOM	No. of EGGS LAID
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16					
SUB TOTAL			TOTAL		
COMMENTS (Feed changes, deaths etc?) <div style="border-bottom: 1px dotted black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px dotted black; height: 15px; margin-bottom: 5px;"></div> <div style="border-bottom: 1px dotted black; height: 15px;"></div>					
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;"> PRINT Page 80 </div>					

POULTRY PROJECT PROGRESS REPORT

Name of owner:
Village:
Date of visit:
Visit made by:

These questions should be answered or ticked during a visit to the farm.
Questions should be answered based on what you have observed during the visit. Circle your answer or write comments.

HOUSE

1. Is the house well maintained?

VERY POOR POOR AVERAGE GOOD VERY GOOD

2. Is the house safe from animals and stealing?

UNSAFE AVERAGE VERY SAFE

Comment:.....

3. Is there fresh grass on the floor?

YES / NO What type of grass:

4. How often is the grass changed?

EVERY WEEK EVERYTWO WEEKS ONCE A MONTH NEVER

5. Has the house been expanded or improved in any way from last month?

YES / NO

Comment:.....

7. Are the chickens and ducks sleeping in the house?

NEVER SOMETIMES ALL THE TIME

8. Are the chickens being let out of the house to walk about?

NEVER SOMETIMES OFTEN EVERY DAY

8. What time of day are they being let out for a walk about?

MORNING MIDDAY AFTERNOON EVENING

CHICKENS

1. How many chickens does the owner have?

Male:.....

Female:.....

Young chickens:.....

2. Are eggs being laid in the house?

YES NO SOMETIMES

3. How many eggs per week?.....

4. How many chickens were eaten or sold last month?.....

5. What did the family do with the chickens and eggs:

Sell for income (How many): EGGS.....CHICKENS.....

(How much for one: EGGS\$......CHICKENS: \$......

Sold at what market?.....

Eaten by family (how many): EGGS:.....CHICKENS:.....

Share for feast / wedding etc (how many): EGGS:.....CHICKENS:.....

DUCKS

1. How many ducks does the owner have?

Male:.....

Female:.....

Young ducklings:.....

2. Are eggs being laid in the house?

YES NO SOMETIMES

3. How many eggs per week?.....

4. How many ducks were eaten or sold last month?.....

6. What did the family do with the ducks and eggs:

Sell for income (How many): EGGS.....DUCKS.....

(How much for one: EGG\$...... DUCK: \$......

Sold at what market?.....

Eaten by family (how many): EGGS:.....DUCKS:.....

- TWICE A DAY ONCE A DAY EVERY FEW DAYS ONCE A WEEK NEVER

- YES / NO

- YES / NO

FAMILY GROUP Sit down with the family group and discuss:

- NOT AT ALL A LITTLE BIT A LOT VERY IMPORTANT

- ### 3. Is the project meeting expectations of the family?

Explain:.....

4. Any other problems managing the project?
.....
5. Any other observations:

.....

- ## 6. Follow up recommendations:

.....

Signed
Field Officer Student

By Russell Parker Kai Kokorako Perma-Poultry

IMPROVED VILLAGE POULTRY KEEPING

There are many other records you can keep to help you keep kokorako successfully.

It is very important for all projects, workshops and other activities that records are kept and reports provided when necessary

The most important record of all is your daily dairy where you can record all the happenings each day.

How long does the feed last, when will you need to buy more, what hen laid what egg, when did those baby chickens hatch.

You can also refer back to your diary for information when you need to complete a report about your project or to make future plans for breeding or to order more feed and chickens.

MARKETING

One of the most important parts of successful marketing is planning.

It is no good if you have lots and lots of kokorako and eggs with nowhere to sell them. Also it is no good if you have lots of buyers coming to your farm and you have no kokorako to sell.

There you should PLAN.

Make sure you know the dates of all local festivals or feasts and busy times like Christmas and New Year when many people return to their home villages for holidays.

However don't sell all your kokorako in the busy times because you still need to keep enough good breeding stock to continue with your business.

You should also plan to include all your costs of selling your kokorako in the price of each one.

Did you need to make special carrying cages to transport the kokorako to sale?
Did you have to pay for the truck to take the kokorako to market?



SAMPLE LESSON PLAN

LESSON No.	TITLE	What we will use (MATERIALS AND NEEDS)
Page No.	Reference:	
What we want from this lesson (OUTCOME)		
How it will be done (APPROACH)		
How we will do it (PROCEDURE)		
DEMONSTRATE		
REVISION & DISCUSSION		
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GOATS – KEEPING ANIMALS WITH POULTRY

Another way of improving your poultry keeping is to include some goats in your farm.

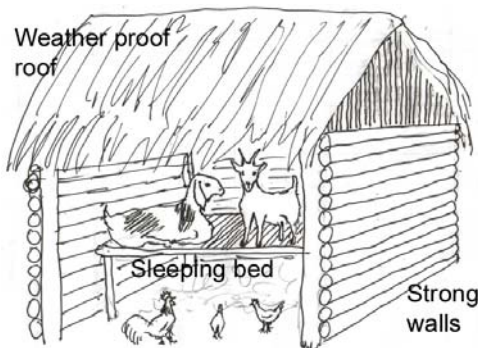
Goats don't need a lot of care like pigs or kokorako but can provide milk and meat for your family.

There are not many goats in the Solomon Islands but they can be very useful and less expensive to keep than pigs or cattle.

Goats are friendly animals and if cared for properly can become good producers for your family.

There are three main reasons for keeping goats:

- Meat from goats is good protein for you and their meat is not fatty so it is also healthy to eat. A goat is a good size to cook for a big feast and much cheaper to own than cattle.
- Meat scraps are goat protein for kokorako.
- Goats can be kept for their milk which is also very good food and will keep children healthy. Leftover milk can be fed to poultry.
- As there are not many goats in the Solomons there are lots of opportunities to keep goats just for breeding so they can be sold across the country to other people.



HOUSING

Goats do not like rain on their bodies or to get their feet wet.

Sometimes their feet can get foot rot from wet ground or they get internal worms because of the wet.

Houses for goats can be similar to kokorako ones but the goat house needs a floor or a big bed made of sticks to keep them off the wet ground.

They need to be strongly built because goats like to play and sometimes damage their houses.

Goats will make a lot of manure in their houses so it is good for the kokorako to be able to scratch in this manure and look for seeds etc during the day.

When you have a lot of manure it can be taken to your gardens to help fertilise the soil.

FEEDING

Goats like to find their food on bushes, trees and other plants. They also like to eat some plants which grow in gardens so their feed is similar to kokorako. You can allow the goats to wander on your farm during the day to eat bushes, trees and grass then in the afternoon when you put the goats in their house for the night you can give them more tasty food like garden leaves or locally grown rice or sorghum to eat.

Always remember that sorghum plants need to be picked and dried in the sun for a few days before feeding them to kokorako or goats because the plant is poisonous when it is green.

Goats need a supply of fresh water at all times so you must make sure if you tie them out during the day that they have that drink available.

Also give them fresh water to drink at night when you shut them in their house.

BREEDING

There are many different breeds of goat available overseas but mostly the goats in the Solomons are of a mixed breed.

Some goats are specially bred for meat, others for milk and some are all purpose.

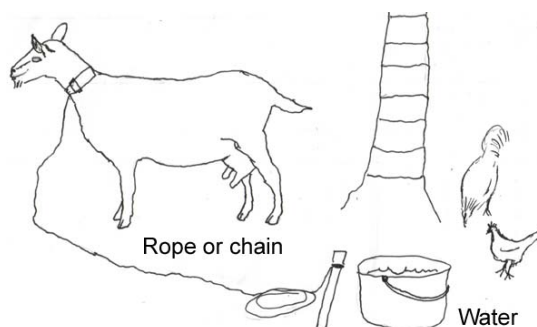
Just like breeding kokorako the goat breeding can be improved by proper selection of the male goat, called Buck or Billy and the female which is called a doe or nanny.

Goats can breed at any time of the year and the newly born goats are called "kids".

Just like kokorako it is best if the farmer controls his goats' breeding so if you own a male goat then you need a separate house to keep him in.

If you plan a log fence for your male goat then it needs to be two metres high so he can't escape and mate with the females when he wants to.

When the female goat is ready to breed you can then take the male goat to her if that suits your plan.



CARE AND MANAGEMENT

Although many goats are kept in tropical countries like the Solomons you need to make sure that your goats can shelter from the weather at all times.

Goats need to be kept under control by strong fences or tied on a chain so they can't escape and go wild in the bush.

They can also damage gardens and plantation or fruit trees.

Climbing trees, houses and rocks is easy for goats so that is another reason to keep them under control.

It is goat for goats to climb on rocks because it keeps their feet healthy.

If your goats are well cared for and tame they can be tied on a rope but if they are still a little wild then sometimes a metal chain instead of a rope is needed.

Goats should also be protected from wild dogs because they will kill or damage them.

This is only a short introduction to goat keeping helping you understand how they can be easily and successfully included with kokorako farms.



Happy Kokorako Keeping!



THE END