Teaching Methodology for Agricultural Life Skills Education for Teacher Training Centers Part 1 Chicken Raising

2013

Unofficial translation

Teaching Methodology for Agricultural Life Skills Education for Teacher Training Centers Part 1 Chicken Raising

Published by the Ministry of Education, Youth and Sport of the Kingdom of Cambodia

Printed in Cambodia, 2013 (First edition)

The development and publication of this document has been funded by the General Directorate of Development Cooperation and Humanitarian Aid (DGD) with technical support from the Flemish Association for Development Cooperation and Technical Assistance (VVOB). The Flemish and Belgian governments cannot be held responsible for the content of this publication.

Copyright Notice

Unless otherwise noted in the materials excluded and rights reserved list below, material in this publication is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. This means that you may distribute copy, remix and build upon this work non-commercially without prior permission of the publisher, as long as you credit and license your new creations under identical terms. More information on this license is available at http://creativecommons.org/licenses/by-nc-sa/3.0/

Material excluded and rights reserved

Some material in this publication is not being made available under the terms of this license. These are Third-Party materials that are being used under fair use or with permission. The publisher will not be liable on any legal basis (including negligence) for any loss or damage suffered through the use of Third-Party material.

Preface

Implementation of life skills in agriculture is currently very attractive in the educational sector globally.

Starting from this context, strengthening life skills in agriculture related to daily livelihood is truly essential for student teachers and students in the present and future.

Therefore, in order to understand life skills, teachers who teach agricultural life skills should:

- 1. Understand the content and objectives, and know how to use materials.
- 2. Prepare adequate materials for each recommended activity.
- 3. Pre-practice by themselves before teaching in classes.

I hope all teachers will pay attention to use these materials for teaching and learning in order to improve education.

On behalf of the Ministry of Education, Youth and Sport, I profoundly thank the working group and VVOB's project technical assistance for compiling all documents.

Phnom Penh, 17 June 2013

Minister of Education, Youth and Sport

COMMITTEE OF AUTHORS OF AGRICULTURAL LIFE SKILLS MANUAL

A. Management Committee

His Excellency Nart Bunroeun

Secretary of State, Ministry of Education, Youth and Sport

B. Quality Assurance Committee

Mr. Leang Seng Hak Director of Teacher Training Department

Mr. Eng Kim Ly Director of Curriculum Development Department

Mr. Chan Sophea Director of Primary Education Department
Mr. Ra Vuthy Director of Vocational Orientation Department

C. Authoring Committee

Mr. Leav Ora Director of Siem Reap Provincial Teacher Training Center

Mrs. Hun Makara

Mrs. Seng Sopheap

Mr. Heng Thyra

Mr. Sok Sethor

Mr. Choun Phea

Mr. Leng Kimsrong

Mrs. Hun Makara

Teacher Trainer of PTTC Siem Reap

Teacher Trainer of RTTC Kandal

Mr. Koy Maquis VVOB SEAL M&E Officer and Facilitator

Mr. Ra Chanroat VVOB SEAL Education Advisor

D. Committee of Revision and Organization

Mr. Chea Phon Deputy Director of Teacher Training Department

Mrs. Ouk Chakrya Deputy Director of Vocational Orientation Department

Mrs. Seak Sokny Officer of Teacher Training Department
Mr. Ouk Dara Officer of Teacher Training Department

Mr. So Chanborey Officer of Curriculum Development Department
Mrs. Huy Chanthou Officer of Curriculum Development Department

Mrs. Thorng Chandavoin Officer of Primary Education Department
Mr. Nay Sacha Officer of Primary Education Department
Mrs. Ven Vandeth Officer of Vocational Orientation Department

Preface

The Household Chicken Raising Manual is prepared in cooperation with the Ministry of Education, Youth and Sport and VVOB.

This book is prepared in order to explain about chicken raising techniques by natural methods. It covers theories and practices in each lesson. The book will make chicken raising easier and it requires less money, furthermore it is promoting quality of health and environment education in our country.

Even though agriculture experts provided technical assistance and materials and a big effort was made to do research of relating documents for this manual, the content may not be complete for teachers to teach their students. However, this manual is a guide for teachers to do more research and prepare lesson plans to fit the actual needs. We hope that this document will enable teachers to prepare teaching materials more effectively. We look forward to seeing your constructive comments and suggestions.

Authors Group

Note

This is the translation of វិធីបង្រៀនស្ដីពីកសិកម្ម ផ្នែកទី ១ ការចិញ្ចឹមមាន់(the training manual Teaching Methodology for Agricultural Life Skills Education for Teacher Training Centers Part 1 Chicken Raising) which was issued in 2013 by the Ministry of Education, Youth and Sport (MoEYS). This translation was made by VVOB (the Flemish Association for Development Cooperation and Technical Assistance and is not an official translation. We hope it may be useful to External Development Partners of MoEYS and Teacher Training Centers who wish to consult the original Khmer manual in English.

INTRODUCTION TO TEACHING METHODOLOGY FOR AGRICULTURAL LIFE SKILLS

This Agricultural Life Skills Teaching Manual is a tool to provide agricultural life skills lessons to future teachers. The manual consist of three parts:

Part 1: Chicken raisingPart 2: Fish raising

- Part 3: Organic gardening.

Together with the Agricultural Life Skills Content Manual and accompanying teaching aids, this set provides you with a range of ideas and methods that are suitable for your agriculture lessons. The lessons in this book provide ideas to practice skills of chicken raising. By using hands-on practice and experiential based learning as the main methodology, student teachers learn how to apply these methodologies with students in their future primary schools. The lessons promote a deeper understanding of issues related to family scale chicken

Definition of Life Skills

'The intellectual, personal, interpersonal and vocational skills that enable informed decisionmaking, effective communication, and coping and self-management skills that contribute to a healthy and productive life to ensure successfully solving daily problems'.

Policy for Curriculum Development 2005-2009, MoEYS

raising, develop skills for problem solving, decision making, persuading and critical thinking. They also provide opportunities for raising awareness of the existence of agricultural problems and ideas for actions which can lead to behaviour change to avoid these problems, for example change to keeping chickens in confinement, use of natural medicine, produce and use of local resources for producing drinkers and feeders.

Objectives of agricultural education

According to the Training-Program for primary-level teachers, taken from the MoEYS curriculum Agricultural Education aims for students to:

- Obtain knowledge, life skills for daily livelihood; for example, skills in planting crops and farming animals to enhance families' living standards.
- Grasp skills and methodologies to impart them to primary school students through practice and experiment.
- Change the attitude and address social and economic challenges through the life skills, problems solving skills, thinking skills, decision making skills, cooperation, and accountability.

Student centered approach

This teaching manual provides ready to use methods and activities, accompanied by teaching

Definition of Life Skills Education

"Life Skills based education is used to empower young people in challenging situations. It involves an interactive process of teaching and learning, which enables learners to acquire knowledge and develop attitudes and skills to support the adoption of healthy behaviours."

aids such as posters, pictures, videos, materials for experiments. Important in all teaching activities is to apply a student centered approach. Examples of activities that motivate students to be involved in the lesson are demonstrative experiments, educational games, creative and performing arts, role play, discussion and debate, learning-by-doing, survey or small research. All of these approaches can be found in this manual.

The lessons described have clear references to which teaching aids can be used for which activity and refer to paragraphs in the content manual. Each lesson describes activities taking up around 40 minutes of the

teaching time, which allows teacher trainers to spend 5 minutes at the beginning and 5 minutes at the end of the lesson to be able to teach the lesson according to the 5 steps of MoEYS.

Use of multimedia

Agricultural issues can also be brought inside the class room by video clips, PowerPoint presentations, photos, et cetera and provide different learning opportunities which focus on awareness building and attitude change. Multimedia will provide information only but a discussion afterwards is needed to give more understanding and more meaning to this lesson activity.

The <u>2 DVDs</u> that belong to this lesson manual provide documentary video clips and clips showing teaching activities described in the lessons. These clips can help the teacher trainer when preparing the lesson. The clip provides a better understanding of how a practical skill should be demonstrated. The clips can also be shown in the lesson to the student teachers when there is no opportunity to practice a certain activity outside the classroom. Where a video clip is available in a lesson the manual also offers ideas for a follow up activity that allows discussing the topic in class, which might help changing attitudes related to topics that are aimed to change students' behaviour such as promotion of natural ways of chicken raising.

References to the DVDs can easil	ly be found by this pictogram.
----------------------------------	--------------------------------

On <u>Disc 3</u> you can find 2 PowerPoint presentations and pictures related to the lessons.

References to the Disc can be found by this pictogram.

TABLE OF CONTENTS

Chapter 1 Basic knowledge of chicken raising (3 lessons)	1
1.1 Background	1
1.2 Objectives	1
1.3 Teaching aids	1
1.4 Teaching procedure	1
1.4.1 Lesson 1 Advantages of family scale chicken raising	1
1.4.2 Lesson 2 Chicken breed selection and chicken growth	
1.4.3 Lesson 3 Transportation	
Chapter 2 Chicken house preparation and construction (4 lessons)	7
2.1 Background	7
2.2 Objectives	7
2.3 Teaching aids	7
2.4 Teaching procedure	8
2.4.1 Lesson 1 Reasons for raising chickens within a chicken house and fence	8
2.4.2 Lesson 2 Criteria for chicken house and its environment	
2.4.3 Lesson 3 Field practice on building the chicken house	
2.4.4 Lesson 4 Field practice on building chicken house (continuation)	
Chapter 3 Chicken feed (3 lessons)	11
3.1 Background	11
3.2 Objective	11
3.3 Teaching aids	
3.4 Teaching procedure	12
3.4.1 Lesson 1 Types of chicken feed and producing the natural feed	12
3.4.2 Lesson 2 Growing duckweed/Azolla, cultivating earthworms and	
preparing insect traps	13
3.4.3 Lesson 3 Practice feeding and producing food and water feeders	13
Chapter 4 Diseases and prevention (5 lessons)	15
4.1 Background	15
4.2 Objectives	
4.3 Teaching aids	
4.4 Teaching Procedure	15
4.4.1 Lesson 1 Sanitation and prevention of diseases	15
4.4.2 Lesson 2 Practice vaccination	
4.4.3 Lesson 3 Producing natural chicken medicine	18
4.4.4 Lesson 4 Environmental Impacts	18
4.4.5 Lesson 5 Reporting on observation results	18

List of multimedia on chicken raising	
List of pictures	19
List of posters	20
References	20

CHAPTER 1 BASIC KNOWLEDGE OF CHICKEN RAISING (3 LESSONS)

1.1 Background

There are many benefits for families to raise chickens. The advantages of raising chickens in confinement instead of having them walk around freely will become clear in this chapter as well as how to choose the kind of chicken breed which is good for raising.

1.2 Objectives

At the end of this chapter student teachers

Knowledge

- are able to list benefits of family scale chicken raising and know the main local chicken species correctly through brainstorming questions, mind map and demonstration.
- can explain the steps of hatching of the eggs and growth of chicken through the rotation group discussion, big group discussion and a poster.
- know how to deliver the chicken safely through group discussion and the real practice.

Skills

- can select the chicken for raising through the real practice.
- can select chicken for breeding through the real practice.
- can properly deliver chicken for raising through the real practice.

Attitude

are interested in the family scale chicken raising.

1.3 Teaching aids

Lesson 1 Flipchart, markers, different chicken species or PowerPoint on different chicken species DISC 3 folder 1.4.1, laptop/computer and LCD screen

Lesson 2 6 flipchart with questions, markers, poster on steps of chicken growth, video clip showing group discussion on breed selection on DVD 1 clip 1.4.2, DVD player/TV or laptop/LCD projector

Lesson 3 True/false statements, chick and small shallow basket etc.

1.4 Teaching procedure

1.4.1 Lesson 1 Advantages of family scale chicken raising

Activity 1: Mind mapping (10 minutes) Content book 1.2

- The mind map is a diagram used to represent words, ideas, tasks, or other items linked to any topic.
- Write the words "Chicken Raising" on the blackboard. Ask the student teachers to share any ideas they have already related to chicken raising.

- Ask questions: What are advantages of family scale chicken raising? What problems can occur?
- Expected answer: Advantages of family scale chicken raising: an extra job apart from rice farming only and income, decrease migration and produce animal dung fertilizer (please see more in the content book 1.2). But it also causes some problems such as chickens easily get disease, etc.
- The teacher trainer writes all ideas on the blackboard.
- Discuss and categorize the ideas and then conclude it.



Picture 1 Example of mind mapping

Activity 2: Demonstration of different available species in Cambodia (20 minutes) Content book 1.3 A and B

- Lead the student teachers to the farm.
- Ask a few student teachers to describe different type of each chicken species.
- Ask the farmer to explain his experience with chicken breeds.
- The teacher trainer adds on presentation of student teachers.
- If it is not possible to visit a farm then use the PowerPoint presentation on different species of chicken on Disc 3 folder 1.4.1.

Activity 3: Brainstorming questions to compare difference between domestic and imported species (10 minutes)

- Brainstorming questions:
 - 1) Where do the different chicken species come from?
 - 2) What are domestic species? What are imported species?
- Explain the different chicken species and the way of making correct decisions on selecting chickens for breeding.
- Ask the question: What are advantages and disadvantages of raising domestic species?
- Conclusion: Comparison on the difference between imported and domestic chicken species.

Table of differences between imported and domestic species

Imported Chicken Breeds	Domestic Chicken Breeds
Pros:	Pros:
- Grow fast	 Resistant to weather and diseases
- Produce more eggs	- Not choosy about food
	 Can hatch the chick by themselves
Cons:	Cons:
 Not resistant to weather, susceptible to 	- Small body
diseases	- Grow slowly
 Choosy about food 	 Produce less eggs (60 eggs/year)
 Not suitable for family chicken raising 	
- High cost and always take care them follow the	
technique.	

1.4.2 Lesson 2 Chicken breed selection and chicken growth

Activity 1: Energizer – whisper story (10 minutes)

- Form a circle with the student teachers (2 or 3 groups).
- The teacher trainer whispers the story (see box) with many facts to the first student beside you.
- Ask the student teacher to whisper it to the next student and continue this around the group.
- Ask the last student to tell the group the final story and compare it with the original story.

Story: Is it the bird flu?

Navi went to the market to buy 2 oranges, 4 pears and 2 kg of rice. She met Neath who said that she had problems that many chicken died in the chicken house. Navi said not to worry and report the problem to the vet.

Activity 2: Rotation discussion (20 minutes) Content book 1.4 A to E

- Put 6 flipcharts with questions on 6 different places in the class room.
 - 1. What are criteria for selecting good breeds?
 - 2. How do you select a cock?
 - 3. How to select a hen?
 - 4. How do you select good eggs as breed?
 - 5. How do you select chicks?
 - 6. How do you keep chicks just after they arrive?
- Divide the class into 6 groups. Each group will start at 1 question and write down their ideas.
- Then the teacher trainer gives a sign that all groups move up to the next table and question.
- They read the responses of the previous group and discuss whether they agree or disagree. If they agree, they tick. If they disagree, they could justify this byadding their own ideas.
- The groups will circle around all the questions. Each group will get a chance to add some ideas on each flipchart.

- Finally the teacher trainer walks around all flipcharts and checks if the given answers are correct and adds last ideas if necessary.
- DVD 1 clip 1.4.2: Teaching activity: video showing the rotation discussion (15 min)

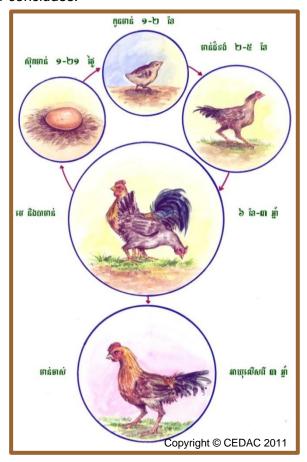
Activity 3: Brainstorming question on poster on chicken growth (10 minutes) Content book 1.5 A and B

- The teacher trainer asks the following example questions:
 - 1) On which day usually, eggs are hatched?

 Answer: on the 21st day (exceeding or less than 3 days) when a hen begins to lay eggs.
 - 2) Which 2 ways of hatching do you know? *Answer: Natural and artificial (by machine).*
 - 3) What should the temperature (inside the machine?) be?

 Answer: between 30 and 37 degrees. The temperature of over 42 degrees causes chicks to die.
 - The temperature is equal on the upper and lower part of eggs.
 - 4) How often should you turn the eggs?

 Answer: Eggs should be turned once every four hours.
- The teacher trainer demonstrates the steps of chicken growth by using the poster "Steps of Chicken Growth".
- Ask the student teachers to explain about each step.
- The teacher trainer concludes.



Picture 2 Poster Steps of chicken growth

1.4.3 Lesson 3 Transportation

Activity 1: Matching to review activity on breed selection through True/False statements (10 minutes)

A good hen lays eggs at least 4 – 5 times a day	True - Imported chicken don't eat all the things domestic chicken eat.
Imported chicken breed are choosy about their food	True - Chicken manure is rich in nutrients and can be used as fertilizer
Domestic chicken grow quickly because they are resistant to weather conditions.	False – Don't separate chicks from their hen immediately, keep them with their hen for 3-7 days.
A good cock is aged between 9 months and 3 years.	True - good hen should be around 1.5 kg and aged 7 months to 3 years.
On arrival you should separate chicks from their hen to prevent disease spreading	False - Indigenous chicken are resistant to weather conditions but they don't grow so quickly as imported chicken.
A good hen should be around 1.5 kg and aged 7 months to 3 years.	True – A good cock is aged between 9 months and 3 years.
To select the good egg to breed, the egg put in water will float	False – A good hen lays eggs at least 4-5 times a day
Chicken manure is rich in nutrients and can be used as fertilizer	False – The egg should sink and then it is good as breed

- Give a strip of paper to the student teachers then tell them some are true and others are false (also available as laminated cards in Life Skills Box).
- One student reads out the sentence to the class. Somebody else in class can say if they think the sentence is true or false and explain why.
- Then the student who has the answer strip will read it out loud.
- The 'circuit' continues until all statements have been read and discussed.

Activity 2: Brainstorming on chicken delivery (5 minutes) Content book 1.6

- The teacher trainer asks brainstorming questions: How can we deliver the chicken properly?
- Student teachers give ideas.
- The teacher trainer writes all answers down on the blackboard without regardless if it is true or not.

Activity 3: Role play on how to deliver chickens (25 minutes)

- Divide the student teachers into 2 groups. Group 1 does the role play on how to deliver chickens in the wrong way. Group 2 in the right way.
- The teacher trainer explains and gives instruction to each group how to do the role play.
- Group 1 starts and then group 2 shows the role play.

- The teacher trainer asks questions:

 1. What activity did you see in group 1 and in group 2?

 2. Are the activities in group 1 and 2 the same? If not why?

 3. Which group would you like to choose in the real situation? The student teachers answer questions.

 The teacher trainer concludes the lesson.



Picture 3 Example of bad transportation of chickens

CHAPTER 2 CHICKEN HOUSE PREPARATION AND CONSTRUCTION (4 LESSONS)

2.1 Background

Reasons for building the chicken house:

- To protect from thieves and bad factors in the environment (draught, rain, heat and sun light)
- Easier care: feeding, vaccination, disease prevention, and daily observation
- Enables proper management: separating chicks from adults, laying hens from others, and controlling reproduction
- To separate from humans to prevent disease transfer (e.g. Avian Influenza, fowl cholera, parasites, etc.)
- To separate healthy chickens from diseased ones.
- Easy to catching chickens to eat, sell or care for.
- The hatchery gets good results.
- Easy to collect the chicken's dung for making fertilizer.
- Decreasing loss from thieving or hunting of other animals.

2.2 Objectives

At the end of this chapter student teachers

Knowledge

- can describe reasons for raising the chicken within the chicken house or fence and explain the conditions for chicken house preparation through brainstorming questions teamwork and work in pairs.
- know the conditions for building a chicken house, inside management and the outside environment of chicken house through rotation group discussion, big group discussion and using poster.

Skills

are able to build the chicken house and fence through the real practice

Attitude

 can apply creativity and prefer to use the local resources such as bamboo, palm leave roof and small plant to build the chicken house in order to contribute in the social economy profit.

2.3 Teaching aids

Lesson 1 Word cards, blank papers (A5 size)

Lesson 2 8 small posters: each poster showing a different confinement method and on the back is the explanation on the picture

Lesson 3+4 Materials for building the chicken house, video clip showing how to make a chicken house on DVD 1 clip 2.4.3, DVD player/TV or laptop/LCD projector

2.4 Teaching procedure

2.4.1 Lesson 1 Reasons for raising chickens within a chicken house and fence

Activity 1: Categorize reasons of raising the chicken within the chicken house and fence (20 minutes)

- Make word cards with the "reason for raising chicken in a chicken house/fence" and "conditions during building the chicken house" following the bullet points in the content book (2.1 and 2.2. A)
- Ask brainstorming question: What is the family scale chicken house?
- The teacher trainer writes "Reason for raising the chicken in the chicken house and fence" at the left side and write the "conditions during building the chicken house" at the right side on the blackboard.
- Distribute the word cards to each student teacher then ask them to put them on the right side of the blackboard.
- The teacher trainer checks up and adjust the assignment of student teachers.
- The teacher trainer concludes and explains more.

Activity 2: Role play on advantages of raising chicken with half confinement method (20 minutes)

- Write the questions on the blackboard: What are the advantages of raising chicken in the chicken house and fence instead of letting them walk freely? Ask the student teachers to think about this question individually about 1-2 minutes.
- Ask a student teacher to play a farmer who raises the chicken based on the natural way, which means that he lets the chickens walk freely. Ask another student teacher to play the farmer who has learnt about the advantages of natural food and raising chickens in the chicken house and fence. Both of them can ask questions to each other about the choices of their attitude.
- At the end of discussion the teacher trainer concludes: Advantages of raising chickens in the chicken house and fence are:
 - 1) Raise in a common fence nearby the house.
 - 2) Raising chickens within a fence around the house is easy to take care of for women, disabled people or children, particularly those who don't work outside
 - 3) It is easy to manage and keep, and the use of natural feed costs less.
 - 4) Chicken manure rich in nutrients can be used as good fertilizer.
 - 5) There is no need to use medicines or hormones.
 - 6) It is a food source for families and increases families' economy.
 - 7) It is good for health.
 - 8) Result can be obtained within 5-8 months.



Picture 4 Chicken in confinement

2.4.2 Lesson 2 Criteria for chicken house and its environment

Activity 1: Reviewing game "I went to market and I bought ..." (5 minutes)

- The teacher trainer will start by saying the sentence "I went to the market and there I bought..." and then will tell one item that is related to chicken raising, for example "bamboo".
- The next person will repeat the sentence including that item bamboo and then he or she will add an extra item, so: "I went to the market and I bought: bamboo and nails".
- The third person will do the same and adds a third item
- Keep going until somebody forgets an item or the person that forgets on item is "out".

Activity 2: Pair discussion on environment around the chicken house (15 minutes) Content book 2.2 B and C

- Divide the student teachers into pairs and distribute paper.
- Ask question: What does the environment around the chicken house look like?
- Student teachers discuss in pairs, write their answer on the paper and put it on the blackboard.
- The teacher trainer concludes and explains more.

Activity 3: Presentation of features of chicken houses (20 minutes) Content book 2.3 A to F

- Tell the student teachers that building a chicken shed does not require a lot of money or skills and it is not very difficult
- Divide the students into 8 groups, because there are 8 small posters showing different ways of confinement.

- Hand out one poster of a different housing method to each group. On the back of the poster information is provided. Each group studies their poster and information for about 5 minutes.
- Then each group will present their poster and explain the information.

2.4.3 Lesson 3 Field practice on building the chicken house

Activity 1: Instruction and practice on building the chicken house (40 minutes)

- Prepare all the necessary materials to build a chicken house and fence around the area.
- Lead the students to place where the designated chicken raising will take place.
- Divide tasks to start building the cages and fence.

Things to consider when building a chicken shed:

- The shed has to be built on a permanently dry land area
- Should be close to the house for security and easy observation
- Should be close to a water supply for drinking and cleaning
- Should be aligned with maximum exposure to sunlight to prevent moist conditions which stimulate disease
- Good ventilation is required
- Must be able to shield chickens from strong winds and rain
- o Fenced area should have trees for shade
- Require enough room for foraging following the semi-confinement method
- Need to have shelves for nests and perches for roosting (sleeping)
- Put rice straw or husk on the shed floor to absorb moisture from excreta and saliva, and to provide an environment for worms and insects as natural feed for chickens
- Should have space for water and feed troughs
- DVD 1 clip 2.4.3 How to build a chicken house (10 min)

2.4.4 Lesson 4 Field practice on building chicken house (continuation)

Build the chicken house following what has been discussed.

The teacher trainer assigns part time tasks.

Evaluate the result.



Picture 5 Chicken house

CHAPTER 3 CHICKEN FEED (3 LESSONS)

3.1 Background

There are 4 main groups of feed that chickens need: body building feed, energy giving feed, protective feed and mineral feed. Lack of any element of the said feed leads to changes in functions of organs and the organs will grow slowly.

3.2 Objective

At the end of this chapter student teachers

Knowledge

- can describe 4 main groups of feed and how to produce natural food through the brainstorming questions, group discussion and presentation by groups.
- can explain how to raise the earthworms and termites and how to grow the Azolla through brainstorming questions, group discussion and real practice at home.
- know how to feed and produce water container and feeder through brainstorming question, group discussion and real practice at home.

Skills

- are able to make the natural food based on a specific formula for every age of chicken through the real practice and additional explanation of the teacher trainer.
- can raise earthworms and termites and can grow Azolla through the real practice and additional explanation of the teacher trainer.
- can correctly feed the chicken and can produce the feeders and drinkers through the real practice at home.

Attitude

 are motivated to produce the natural food and use simple techniques in family scale chicken raising.

3.3 Teaching aids

Lesson 1 Ingredients for chicken feed according to recipes in content book, video clip on food production DVD 2 clip 3.4.1 DVD player/TV or laptop/projector

Lesson 2 Materials for:

- 1) making earth worm cultivation: plastic cover (or use old water jar) cattle or buffalo dung, plant debris (dry leave, rice straw and water hyacinth), unused water jar, well ring, large bowl, hole, palm leaves
- 2) making termite trap: animal dung, coconut shell, plant debris, branching bamboo stick or tree branch for covering
- 3) making Azolla: plastic cover, cow dung or pig manure, 1kg Azolla seeds Video clip DVD 2 clip 3.4.2 duckweed production, earthworm and termite cultivation

Lesson 3 Bamboo, tyre, orange juice and water bottles, wooden trough, plastic bucket, plastic pipe, etc., video clip on production of feeders and drinkers DVD 2 clip 3.4.3 DVD player/TV or laptop/projector

3.4 Teaching procedure

3.4.1 Lesson 1 Types of chicken feed and producing the natural feed

Activity 1: Group discussion on food categories (10 minutes) Content book 3.1

- Brainstorming questions: What are the foods of chicken?
- Questions of discussion:
 - 1. What are the advantages of body building feed? Where does it come from?
 - 2. What are the advantages of energy giving feed? Where does it come from?
 - 3. What are the advantages of protective feed? Where does it come from?
 - 4. What are the advantages of mineral feed? Where does it come from?
- Reporting by groups
- The teacher trainer concludes the result.
- Additional answer: Chicken food comes from plants and animals.

Activity 2: Practice on producing chicken food based on specific formula table (30 minutes) Content book 3.2 A

- Play the video clip on producing chicken food DVD 1 clip 3.4.1 (20 min).
 - Divide the student teachers into 3 big groups: introduce the formula of making food (Can be selected by any choice)
 - 1) Group 1: Food for chick
 - 2) Group 2: Food for hens which lay eggs.
 - 3) Group 3: Food for chickens which are raised for meat.
 - Ask the student teachers to weigh each material by following the directions in the content manual and food preparation.
 - Each group representative presents how to make the food.
 - The teacher trainer gives extra explanation.



Picture 6 Chicken food

3.4.2 Lesson 2 Growing duckweed/Azolla, cultivating earthworms and preparing insect traps

Activity 1: Outdoor Practice (40 minutes) Content book 3.2 B to D

- Brainstorming question: What are the advantages of producing your own chicken food?
- Expected answer: The advantages of producing your own chicken food are:
 - It is cheaper than buying prepared feeds from the market.
 - The student teachers learn how to use existing materials and resources
 - It is easy to do it by themselves
 - Easy to find ingredients/materials
- The teacher trainer explains how to raise earthworms, termites and grow Azolla for each group.
- Lead the student teachers to outside the class. Divide the student teachers into 3 groups. Group 1 works on the earthworm cultivation, Group 2 works on termites and Group 3 works on Azolla/duck weed according to the information in the content book. (This activity can be finished after the lesson finishes.)
- DVD 2 clip 3.4.2: Video showing duckweed production, earthworm and termite cultivation (15 min)

3.4.3 Lesson 3 Practice feeding and producing food and water feeders

Activity 1: Outdoor practice: Observing the earthworm, termite and Azolla (10 minutes)

- Lead the student teachers to observe the earthworms, termites and Azolla by asking each group representative to recap the method of preparation and its advantages.
- Other student teachers can listen and ask questions.
- The teacher trainer concludes the result of the real practice.

Activity 2: How to store food (5 minutes)

- Ask the student teachers to share their own ideas about how to store the food.
- Tell the student teachers that it is important to store chicken feeds properly to prevent waste and loss of money
- The teacher trainer shares the TIPS with them.

Tips: How to store dry chicken food for 1-2 months

- Keep the food in water proof bag or container
- Use planks to support the bag/container above the floor
- o Keep the food in a dry place but have enough sunlight to limit moisture
- o Make sure the food does not rot
- Tell the student teachers that fresh feedstuff (like earthworms, termites, snails, molluscs, vegetables...) should be mixed with the feed at the time of feeding, as they do not store well.

Activity 3: Producing different feeders (20 minutes) Content book 3.3 A and B

- Brainstorming question: What are feeders for chicken made of? Please describe their appearance.
- Divide the student teachers into groups depending on the total number of them to produce the feeders differently through the use of bamboo, tyre, orange juice and water bottles, wooden trough, plastic bucket and plastic pipe, etc.
- The teacher trainer sets the number of troughs which need to be produced more in each group for further use in the chicken house.



Picture 7 Bamboo feeder

Picture 8 Plastic drinker

DVD 2 clip 3.4.3 Video showing the production of feeders and drinkers (12 min).

Activity 4: Instruction on how to feed (5 minutes) Content book 3.4

- The teacher trainer gives tips of feeding and providing water to the student teachers.

CHAPTER 4 DISEASES AND PREVENTION (5 LESSONS)

4.1 Background

The definition of bird's diseases is health decline of birds such as chickens and ducks which is caused by bacteria, virus, environmental factor, and other factors.

4.2 Objectives

At the end of this chapter student teachers

Knowledge

- can describe types of diseases and their prevention through brainstorming questions, individual work, presentation on 6 diseases and the role play.
- can explain how to do a correct vaccination for each type of medicine through real practice.
- can explain how to feed food and water and produce them correctly the through brainstorming questions, group discussion and real practice at home.

Skills

- can make natural food based on a specific formula for each age of chickens through real practice and additional explanation of the teacher trainer.
- can correctly vaccinate chickens through real practice at school.

Attitude

 are encouraged to improve sanitation and apply easy ways of preventing diseases during chicken raising.

4.3 Teaching aids

Lesson 1 paper and PowerPoint presentation on 6 diseases Disc 3 folder 4.4.1, laptop/computer and projector, video clip showing role play on bird flu prevention DVD 2 clip 4.4.1, DVD player/TV or laptop/LCD projector.

Lesson 2 Paper ball (hot potatoes game), vaccination supplies such as Newcastle F, Fowl Pox, injector, ice container, liquid stuff to mix with the vaccine, etc. video clip on vaccination DVD 2 clip 4.4.2, DVD player/TV or laptop/projector.

Lesson 3 Vaccination supplies such as Newcastle M, Newcastle Lasota and Cholera injector, ice container, liquid stuff to mix with the vaccine, etc.

4.4 Teaching Procedure

4.4.1 Lesson 1 Sanitation and prevention of diseases

Activity 1: Individual brainstorming ideas (15 minutes) Content book 4.2

- Distribute paper to the student teachers to write down answers.
- The teacher trainer asks: What measure can we do to prevent the disease?

- The student teachers put answers on the blackboard.
- The teacher trainer checks and explain more as following:
 - 1) build chicken house separately and away from house/enclosure of other animals;
 - 2) keep new chickens for 14 days before mixing with others;
 - 3) eliminate source of dirty water around the house, chicken house and the yard around house :
 - 4) clean the chicken house and feeders/drinkers every morning;
 - 5) feed and water must not be spoiled;
 - 6) whenever infections break out, clean and kill viruses on the pen, feeders, drinkers and premises around the house with white lime. Leave the house empty for 2-4 weeks before raising new chickens in it;
 - 7) remove the used chicken nest pads and burn them to prevent louses or mites;
 - 8) do not buy any chickens which are suspected sick from market or villages where there is outbreak of infections;
 - 9) if there are sick chickens or if we wonder that there will be an outbreak of infection, we must keep them in a separate cage;
 - 10) do not eat or sell sick chickens bury or burn them;
 - 11) prevent chickens traders and other people from entering the premise and the chicken house;
 - 12) vaccinate chickens regularly and properly (vaccines);
 - 13) release the worm for 3 weeks old chicks to help them grow quickly and healthy.

Activity 2: Presentation on 6 major chicken diseases (25 minutes) Content book 4.1

- Brainstorming question and do a presentation of 6 types of diseases: What are the causes of chicken diseases?
 - Answer: The chicken diseases are caused by bacteria, virus, intestinal worms, environmental factors and other factors.
- The teacher trainer shows the student teachers about 6 diseases through the PowerPoint presentation on Disc 3 folder 4.4.1.
 - Ask the student teachers to take note important information, which they have received from the presentation.
 - Question and Answer

Extra activity: Role play on bird flu prevention in the community

- Divide the student teachers into 2 big groups.
- Group 1 prepares the drama about "Measures to prevent the bird flu transfer to humans".
 - Group 2 selects another disease.
- Each group is allowed 5 minutes for playing.
- Comments and questions from audiences and the teacher trainer
- Reflecting question:
 - 1) What is the story about?
 - 2) What did each player do?
 - 3) Which part of the story are you interested in? Why?
 - 4) What...?

DVD 2 clip 4.4.1Teaching activity: Video showing role play on bird flu prevention (16 min)

4.4.2 Lesson 2 Practice vaccination

Activity 1: Hot Potatoes Game: Review on preventing and sanitizing (10 minutes)

- Make a ball paper by using question sheet to review the lesson.
- Ask the student teachers to stand in a circle then start to pass the ball (the teacher trainer can lead them to sing or clap or use other tools to make a sound)
- Whenever the teacher trainer says "Stop!" at the same time a student teacher who is handling the ball should take a question sheet then read it aloud and try to answer it. The teacher trainer can ask more questions, if necessary.
- Continue with this circuit until all question sheets have been taken.
 Example questions:
 - 1) Can you name the 6 diseases?
 - 2) What do you do to prevent bird flu?
 - 3) How can you know a chicken has Newcastle disease?
 - 4) If the chicken seems to have breathing difficulties what disease could it have? Etc.

Activity 2: Practice vaccination (30 minutes) Content book 4.3

The teacher trainer shows how to vaccinate for the Newcastle F and Fowl Pox for 9 or 10 days chicks. The teacher trainer shows for Newcastle M, Newcastle Lasota and Cholera (40 days chicken).

☐ If there is no chance to practice vaccination in the real situation you can show the video on vaccination on DVD 2 clip 4.4.2. (16 min)

The teacher trainer puts the list of raw materials of natural chicken medicine on the black board then asks student teachers to bring those material for a next lesson.



Picture 9 Vaccination of chicks

4.4.3 Lesson 3 Producing natural chicken medicine

Activity 1: Practice producing natural chicken medicine (40 minutes) Content book 4.4

- The teacher trainer divides student teachers into 3 groups to do activities as below:
 - Group 1: produce a medicine for releasing worms.
 - o Group 2: produce a medicine to keep normal temperature.
 - Group 3: produce a medicine to protect the Sromeul insect.
- The teacher trainer asks the student teachers to put raw materials on table.
- The teacher trainer directs on how to produce medicine by each group.
- The teacher trainer leads student teachers to practice outside the class.
- The teacher trainer explains on how to use it and concludes the lesson.

4.4.4 Lesson 4 Environmental Impacts

Activity: Prepare questionnaire for farmers (40 minutes)

- Brainstorming question: What is the recent situation of raising chickens in the family and community?
- Divide the student teachers into groups.
- The teacher trainer explains that the student teachers should go and observe a farm where chickens are raised by themselves before the next lesson.
- Ask each group to prepare a questionnaire for an interview with the farmer and an observation checklist to observe the main characteristics of the farm.
- The teacher trainer checks and adjusts the questionnaire and checklist of each group and gives advice on the place for observation.

Example questions

- 1. How many years' experience do you have in chicken raising?
- 2. What are the reasons that you started raising chicken?
- 3. Were you successful from the start?
- 4. What are the main challenges for you?
- 5. What according to you are good ways to keep the chickens healthy?
- 6. Will you continue to raise chicken and if yes, why?
- 7.?

Example observation check list

- 1. What is the size of the chicken house and the fence around it?
- 2. How many chickens does the farmer keep in that area?
- 3. What kind of feeders and drinkers does the farmer use?
- 4. How is the chicken food stored?
- 5. Is the farm clean and well maintained?
- 6.?

4.4.5 Lesson 5 Reporting on observation results (40 minutes)

- Each group is allowed 10 minutes to present their experiences (positive and negative observation points) of their visit to a farmer.
- Other groups can comment or give feedback at the end of each presentation. They pretend to be a local vet to make strong recommendation to that group how the farmer can improve the weak points.
- Question: What did you think about this research?
- Each group re-compiles the information to make the report of case study, and keep them in the library.

LIST OF MULTIMEDIA ON CHICKEN RAISING

DVD/DISC	Chapter/lesson	Multimedia	Source
	Chapter 1 Basic knowledge of chicken raising		
Disc 3	1.4.1 Lesson 1 Advantages of family scale chicken raising	Activity 2 PowerPoint on chicken species	VVOB
DVD 1	1.4.2 Lesson 2 Chicken breed selection	Activity 2 Video of Group discussion on breed selection	Open Institute/ VVOB
	Chapter 2 Chicken house preparation and construction		
DVD 1	2.4.3 Lesson 3 Field practice on building chicken house	Activity 1 Video How to make a chicken house	VVOB
	Chapter 3 Chicken feed		
DVD 1	3.4.1 Lesson 1 Types of chicken feed	Activity 2 Video Chicken food production	Open Institute/ VVOB
DVD 2	3.4.2 Lesson 2 Growing duckweed, cultivating earthworms and preparing insect traps	Activity 1 Video Duckweed production, termite and earthworm cultivation	Open Institute/ VVOB
DVD 2	3.4.3 Lesson 3 Practice feeding and producing food and water feeders	Activity 3 Video Production of feeders and drinkers	Open Institute/ VVOB
	Chapter 4 Diseases and prevention		
Disc 3	4.4.1 Lesson 1 Sanitation and prevention of diseases	Activity 2 PowerPoint on chicken diseases	VVOB
DVD 2	4.4.1 Lesson 1 Sanitation and prevention of diseases	Extra activity Video Role play on bird flu prevention	Open Institute/ VVOB
DVD 2	4.4.2 Lesson 2 Practice vaccination	Activity 2 Video Vaccination	Open Institute/ VVOB

LIST OF PICTURES

Title	Source
Picture 1 Example of Mind mapping	VVOB SEAL 2012
Picture 2 Poster Steps of chicken growth	Copyright © CEDAC 2011
Picture 3 Transportation of chicken	VVOB SEAL 2012
Picture 4 Chickens in confinement	VVOB SEAL 2011
Picture 5 Chicken house	VVOB SEAL 2011
Picture 6 Chicken food production	VVOB SEAL 2011
Picture 7 Bamboo feeder	VVOB SEAL 2011
Picture 8 Plastic drinker	VVOB SEAL 2011
Picture 9 Vaccination of chicks	VVOB SEAL 2011

LIST OF POSTERS

Lesson	Title of poster	Source
Chicken raising		
1.4.2 Lesson 2 Activity 3	Steps of chicken growth	Copyright © CEDAC 2011
2.4.2 Lesson 2 Activity 3	8 A4 laminated posters:	Mr Thea Savuth,
	8 ways of chicken confinement	Department of Agricultural
		Extension Kandal

REFERENCES

Active Learning and Teaching Methods, Partnership Management Board Ireland, a PBM Publication © 2007

Easy ways of chicken raising © Éditions SIPAR 2009

Farmer and Nature, Techniques of chicken raising based on natural ways, Chicken raising, CEDAC, 2007

Policy for Curriculum Development 2005-2009, Ministry of Education, Youth and Sport, 2006

Trainer's manual to Improve Family-Scale Chicken rearing, VVOB ImAgE programme, 2010

Webpage with organisation as author

http://www.unicef.org/lifeskills