



## Module 6: Basic Knowledge Management and Extension



### WORKBOOK

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# Module 6: Basic Knowledge Management and Extension

## Pre-assessment

After reading through the module overview and introduction complete the following pre-assessment in order to determine how comfortable you are with the topic of extension. Rate your knowledge on the topics on a scale of 1 to 5 by circling the corresponding number.

	Question	Self-assessment				
		Low		High		
1	I am able to explain the different types of knowledge that exist.	1	2	3	4	5
2	I am able to identify different sources through which knowledge can be gained.	1	2	3	4	5
3	I understand the term knowledge management and what role it plays in agricultural extension.	1	2	3	4	5
4	I can identify different areas of knowledge that need to be integrated for successful innovation.	1	2	3	4	5
5	I can describe different communication models.	1	2	3	4	5
6	I am able to identify problems that may prevent effective communication.	1	2	3	4	5
7	I am aware that agricultural innovation has different levels of complexity.	1	2	3	4	5

	Question	Self-assessment				
		Low		High		
8	I can describe the different innovation intermediary roles and knowledge exchange encounters that take place in agricultural innovation.	1	2	3	4	5
9	I am aware that as an extension agent I have to act as a knowledge manager for farmers as well as keep my own knowledge up-to-date.	1	2	3	4	5
10	I am aware of the different forms of traditional and modern ICT communication media available for communicating innovation messages.	1	2	3	4	5

# Study unit 1: Different types of knowledge

## Session 1.1: Different types and sources of knowledge

### Activity 1.1 Individual activity: Knowledge types and sources

Study the following examples and choose the correct description of the type or source of knowledge. Write your answer in the space provided.

1. Attending a course at the local further education and training (FET) college on the benefits of crop rotation. (2)
  - a. Formal knowledge
  - b. Explicit knowledge
  - c. Experiential knowledge
  - d. Implicit knowledge
  - e. Both 'a.' and 'b.'
  - f. Both 'c.' and 'd.'

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2. A baker's assistant working alongside an experienced baker in the bakery. (2)
  - a. Formal knowledge
  - b. Explicit knowledge
  - c. Experiential knowledge
  - d. Implicit knowledge
  - e. Both 'a.' and 'b.'
  - f. Both 'c.' and 'd.'

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3. A textbook on integrated pest management. (2)

- a. Formal knowledge
- b. Explicit knowledge
- c. Experiential knowledge
- d. Implicit knowledge
- e. Both 'a.' and 'b.'
- f. Both 'c.' and 'd.'

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4. You know what the best time of day is to go to your local farmer's market. (2)

- a. Formal knowledge
- b. Explicit knowledge
- c. Experiential knowledge
- d. Implicit knowledge
- e. Both 'a.' and 'b.'
- f. Both 'c.' and 'd.'

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**Total: 8 marks**







# Summative assessment: Unit 1

Answer the following questions in your own words. Write your answer in the space provided.

1. Briefly define these terms: information and knowledge. (6)

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2. Study the following examples and discuss the different sources and types of knowledge involved.

- 2.1. A high school student is studying for an upcoming Geography exam. During her studies she uses an atlas to look up the capital cities of all the countries on the African continent. What type of knowledge has she gained and what source of knowledge was involved? (2)

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2.2. The same high school student asks her mother, a dressmaker, to help her to sew a traditional dress for her upcoming dance using a new pattern. What type of knowledge has she gained and what source of knowledge was involved? (4)

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3. What is knowledge management and why is it important for an extension agent? (3)

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4. Name and briefly explain the four modes of knowledge conversion in the SECI model of knowledge management. (8)

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5. List the three main areas of knowledge that need to be integrated in order for successful innovation. (3)

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6. State whether the following statement is true or false and give a reason for your answer. (2)

Knowledge about past extension activities in a specific area will not significantly aid in the successful introduction of new technologies in that area.

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**Total: 28 marks**



## **Activity 2.2 Case study: Identify possible communication barriers**

Read the following case study and discuss the possible communication barriers that extension agents may face when trying to implement this innovation. Write your answer in the space provided.

Company X is an agricultural research and development organisation funded by industry and government. It has been operating for more than 15 years and has successfully developed several technologies for application in the beef industry. The organisation has a wide range of research and industry partners and is highly regarded for its genetic research.

They conduct research on DNA markers which are specific sequences of DNA that identify particular genes in an organism. In the beef industry, the commercialised markers show how many favourable copies of the gene an animal has for a particular production trait. For example, cattle have a number of genes that influence tenderness. One such gene is the Calpain gene. If the animal has two copies of the favourable form of this gene, it has the genetic potential to produce more tender beef than an animal with one positive and one negative form of the gene. In turn, an animal with one copy of the positive form of the gene will have a better chance of producing tender beef than an animal with zero copies of the favourable form of the gene.

This commercialised DNA marker test allows cattle producers to identify animals with the favourable genes by having hair, semen, blood or tissue samples tested. The results of the DNA marker analysis are sent to the producers in a report where the animal is ranked as 0, 1 or 2 stars for each gene (0 being no favourable forms of the gene and so on). The breeder is then able to select or mate cattle with a known genetic profile for that gene. The benefit of this over other selection methods is that it is a diagnostic tool, meaning that the specified DNA sequence is present or it is not and this does not change









## Session 2.3: Extension as a knowledge management system

### Activity 2.4 Individual activity: The extension agent as a knowledge manager

Answer the following question in your own words. Write your answer in the space provided.

1. Fill in the missing words. (14)

It is very important for extension agents to have a \_\_\_\_\_ (a) knowledge management system in order to \_\_\_\_\_ (b) with current knowledge in the AIS. There are \_\_\_\_\_ (c) main avenues extension agents can use to optimise their skills and expertise. Extension agents can learn by exchanging knowledge with colleagues from the \_\_\_\_\_ (d) organisation using \_\_\_\_\_ (e) to store knowledge, \_\_\_\_\_ (f) and face-to-face informal and formal \_\_\_\_\_ (g). Secondly interaction with the \_\_\_\_\_ (h) allows extension agents to enhance their skills by \_\_\_\_\_ (i) learning (gaining implicit knowledge). Extension agents can also learn by forming \_\_\_\_\_ (j) with colleagues from \_\_\_\_\_ (k) \_\_\_\_\_ (l). Lastly extension agents can gain knowledge through \_\_\_\_\_ (m) interaction and cooperation with \_\_\_\_\_ (n).

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**Total: 14 marks**

## Summative assessment: Unit 2

Answer the following questions in your own words. Write your answer in the space provided.

1. Briefly describe the main features of the following models of communication.

1.1. Sender-oriented model (3)

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1.2. Receiver-oriented model (2)

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2. Identify the main communication model used in the following examples. (2)

2.1. Listening to the radio

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2.2. Two families negotiating who pays for what in an upcoming wedding celebration.

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3. List five possible communication barriers that could prevent an innovation message from reaching its intended audience. (5)

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4. Name two different innovation intermediaries necessary for successful agricultural innovation and briefly explain their main role within innovation systems. (4)

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5. Explain why it is important to be both a knowledge manager for farmers and to have a personal knowledge management strategy in agricultural extension. (4)

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**Total: 20 marks**

## Study unit 3: Communication media and tools to support knowledge management

### Session 3.1: Different forms of communication media

#### Activity 3.1 Individual activity: Different forms of communication

Answer the following question. Write your answer in the space provided.

1. Choose the term in column B that best matches the statement in column A. (6)

Column A	Column B
1. Communication media that can reach a large target audience	a. Written media
2. Communication media that is well-suited to an extension agent in a knowledge translator role	b. Verbal media
3. Communication between communication parties is immediate	c. Mass media
4. Communication media able to communicate explicit and implicit knowledge	d. Tactile/olfactory media
5. Communication media that can enhance experiential learning	e. Visual communication
6. Posters, training videos and television shows	f. Synchronous communication

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**Total: 6 marks**

## Session 3.2: Using ICT to enhance knowledge management

### Activity 3.2 Individual activity: Comparison of different media

Answer the following question in your own words. Write your answer in the space provided.

1. Complete the table comparing traditional mass media, interpersonal media and modern ICT media. (15)

	Traditional mass media	Interpersonal media	Modern ICT media
Relative cost per person reached			
Possible size of target audience			
Storage capacity			
Synchronous/Asynchronous			
Time flexibility			

**Total: 15 marks**

# Summative assessment: Unit 3

Answer the following questions in your own words. Write your answer in the space provided.

1. Explain the following terms in relation to the study material. (8)

1.1 Asynchronous communication

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1.2 Tactile communication

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1.3 Spatial flexibility

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1.4 Time flexibility

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2. List two possible merits and two possible limitations of mass media to communicate a message. (4)

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3. Provide two examples of each of the following communication media. (6)

3.1 Written communication

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3.2 Verbal communication

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3.3 Visual communication

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4. Briefly explain why mobile phone applications can be a useful and cost-effective way to transfer and share innovation knowledge. (2)

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5. Discuss two limitations faced when using modern ICTs in agricultural extension and innovation systems. (4)

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**Total: 24 marks**



## Post-assessment

The post-assessment is to be done once you have read through the module and completed all the activities. Compare your answers to those in the post assessment to identify where knowledge has been gained and where improvements can be made. Rate your knowledge on the topics on a scale of 1 to 5 by circling the corresponding number.

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5	I can describe different communication models	1	2	3	4	5
6	I am able to identify problems that may prevent effective communication.	1	2	3	4	5
7	I am aware that agricultural innovation has different levels of complexity.	1	2	3	4	5
8	I can describe the different innovation intermediary roles and knowledge exchange encounters that take place in agricultural innovation.	1	2	3	4	5

Question		Self-assessment				
		Low		High		
9	I am aware that as an extension agent I have to act as a knowledge manager for farmers as well as keep my own knowledge up to date.	1	2	3	4	5
10	I aware of the different forms of traditional and modern ICT communication media available for communicating innovation messages.	1	2	3	4	5