

# Guideline Extension Material Development

## For Researchers



## **Extension Material Development Guideline**

JICA/EIAR **FRG II** Project 2014

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## 1. INTRODUCTION

The purpose of your research is to contribute to the modernization and transformation of the agriculture in Ethiopia. Research outputs would be less meaningful if it is not practically used by farmers. In order for research outputs to be meaningful, it must be compiled into a form that supports their dissemination for practical use by end users - farmers and pastoralists. Extension materials are communication tools which connect researchers and farmers/pastoralists.

You may know someone who is good at verbal communication fascinating anyone around him/her by interesting and persuasive talks, and someone the opposite. Similarly, some publications are very understandable and some are complicated and difficult to understand their contents. Few researchers and other agents in the agricultural sector possess the know-how to simplify research reports and bulletins in formats that could be easily understood and used by extension staff as well as farmers.

There are some common factors in both 'good verbal communication' and 'understandable publications'. This guideline is written to introduce some of the key techniques required to develop good and understandable publication for agricultural extension based on mainly research outputs. These techniques are neither difficult nor something special. In many cases, there are things that are often overlooked. Following the points stated in this guideline, researchers can easily make the contents of the extension materials they are planning to develop more trustworthy and transferable. Transferable extension material is a synonymous of 'good extension material'.

You may imagine a farmer/pastoralist whose works and achievements can be much improved by new technology, knowledge and/or practices developed by your research activities undertaken for several years. Imagine that your achievement making agriculture on a better platform and improving the livelihood of the smallholder farmers/pastoralists was hindered because the new technology, knowledge or practices were not communicated well to them. This obviously implies that effective communication is equally important as technology and knowledge generation.

This guideline presents the key steps in developing an extension material using of your research outputs for effective communication through illustrations and examples.

## 2. KEY INDICATORS OF 'GOOD' EXTENSION MATERIAL

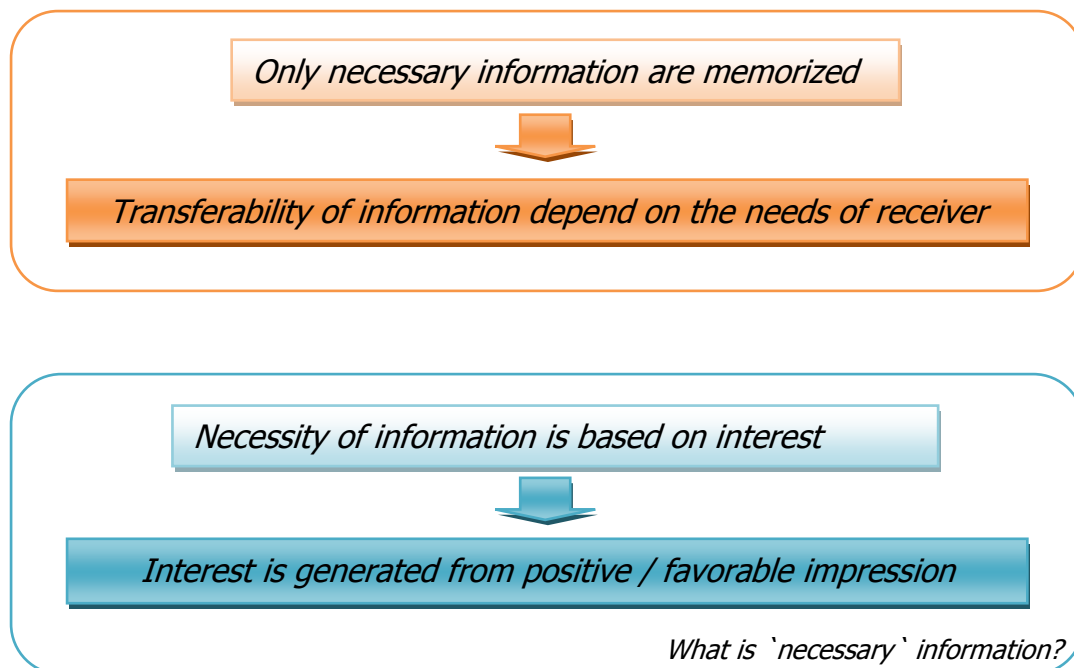
How good an extension material is highly associated with how it helps in achieving the intended purpose. In general, the main purpose of extension materials is to transfer information correctly and effectively.

The key indicators for a good extension material are:

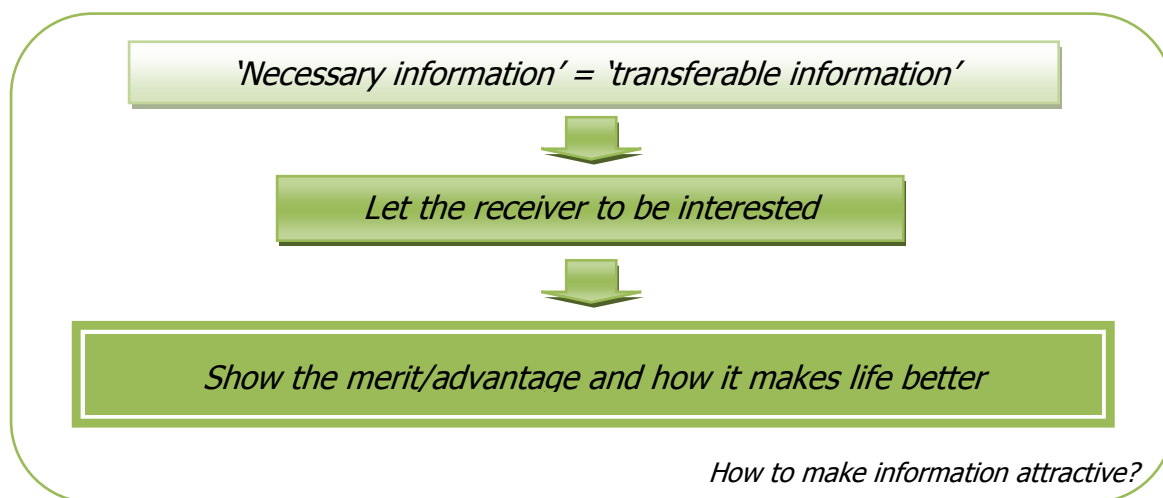
- (i) Whether information is transferable, which is linked with the easiness of the information presented to be understood by target individuals or group of individuals,
- (ii) How well the information is organized and arranged, and
- (iii) How the information is mainstreamed to achieve the set objective(s).

### 2-1. 'TRANSFERABLE' INFORMATION

Farmers/pastoralists select information sometimes consciously and the other time unconsciously. Conscious selection of information is highly dependent on the interest of farmers/pastoralists. Thus, they memorise only information judged to be necessary, which also depend on the content, design and overall situation of communication approach at hand. In other words, the extent of necessity for the receiver tips the balance against the result of communication. Such type of information is often transferred and applied into action immediately.



**Transferable information is variable for the receiver.** Thus, the first step of extension material development is how to show its necessity well to receivers. Receivers will be interested in and want to get the information if they understand its **value**. One way of making information easily understandable is using favorable and concrete images.



Let us suppose that a researcher released a new crop variety and the variety is resistant to drought and provides on average 1.2 times more yield in comparison to local varieties. The researcher wants to introduce it to farmers. How the information for effective introduction of the variety should be designed and communicated requires that (1) the purpose of information is defined, (2) the information is organized to bring farmers' attention and interest to let them want to receive the information, (3) the information is prepared in a manner that shows how it is valuable to farmers, and (4) the information is prepared in a manner that fits farmers' circumstances such as education level and cultural value.

## 2-2. ORGANISED INFORMATION

If information is not well organized, whatever valuable information is included, it does not reach intended receivers.

"Organized information" means 'every pieces of information are sorted and laid out along with a certain order'.

It is like constructing a text, which usually flows 'Introduction – Body – Conclusion'. 'Introduction' is to catch readers' attention and let them know what the author is going to tell, 'Body' explicates main ideas then 'Conclusion' wraps up the idea.

Let us apply this flow to the case of 'new variety', which was previously described.

In introduction, it may state that a new variety has been developed and higher yield is expected. Supporting information such as yield, necessary conditions, required agronomic practices and limitations is described in the Body. What the new variety is able to bring is summarized in the conclusion. The flow aims to raise the attention and attract the interest of receivers with readers' point of view. 'Transferable' means 'understandable' and 'Understanding' leads to 'Actions'.

A good extension material:

- 1) attracts the interest of farmers,
- 2) enables farmers understand the value of the technology, and
- 3) prompts actions among farmers.

The steps that need to be followed, which are explained in the following chapter.

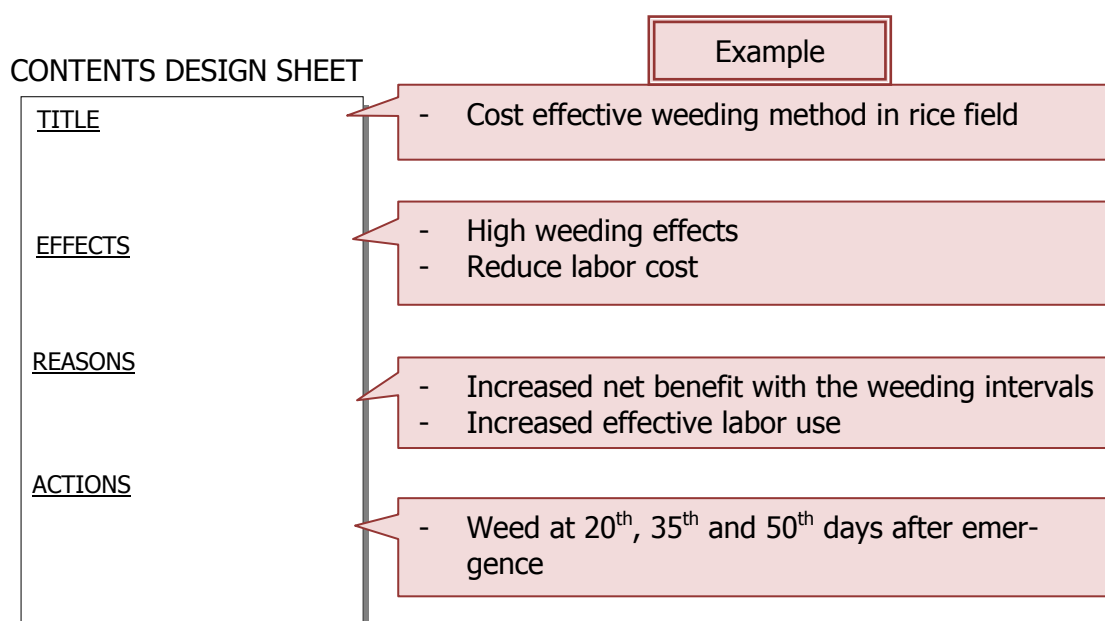


### 3. DESIGNING EXTENSION MATERIAL

Firstly, contents of the extension material are worked out. Information to be included must be assembled to be understandable and transferable.

#### <STEP-1> MAKE A STORY

1. Get a piece of paper. Write 'Title' at the top of the paper followed by 'Effects', 'Reasons' and 'Actions' as shown below. It is recommended to use the format presented on the next page to work on the contents of your extension material.



2. List most significant advantages which has been revealed by your research in 'Effects'.  
→ What are the most attractive advantages for farmers?
3. List reasons for the effects in 'Reasons'.  
→ What reasons will most strongly motivate farmers?
4. List required activities/procedures in 'Actions'.  
→ What actions will be required to farmers?

☆'Bullet points' to avoid descriptions in long sentences!

If you are working in group, let each group member writes individually first in the sheet. Then, let them exchange the views and compile the contents into one paper.

*SUMMARY SHEET*

Title	<u>Short and easily remembered.</u>
Effects of the target technology	<u>What advantages of the technology are most attractive?</u>
Reasons for farmers to adopt	<u>What motivates farmers?</u>
Actions for farmers to take	<u>What farmers' actions will be required to practice the target technology?</u>

## <STEP-2> VERIFY THE STORY

This step examines the information listed in the paper. The information should flow as a story. It is recommended to make sure that the 'reasons' are convincing for the 'effects' and 'actions' are surely leading to 'effects'. **Each point must be clear, simple, and structured logically.**

Verify the story using the following criteria.

- 1) What are farmers' concerns?
- 2) Do farmers need additional or more detailed information?

New technologies usually demands farmers to have courage to try first. Together with information on cost, labor and others, expected risks must be stated clearly. You may use your experience to guess what kind of concern farmers raise. Or you can ask some farmers if the information included in the draft extension materials are enough.

For instance, if a new technology recommends a planting interval between seedlings to be two times wider than the local practice or reduced seed rate by half compared to what farmers usually use, your target farmers may be concerned about more weed and decreased yield. Clear answer must be provided such as; 'Wider interval enables each seedling to grow faster and stronger, as a result, gross yield is increased'; 'lower seed rate decrease seed cost and more available nutrients for each plant, thus, improve productivity and profitability'.

Verifying the scope of information is also important. For example, cuttings from the 3rd node of healthy mother plants are recommended for stevia propagation. The cutting method should be supplemented with other technical information such as use of pots, suitable cutting timing, how to select healthy mother plant, reasons for using pots, suitable soil types for medium and required fertilizer. Sometimes it may be beyond the scope of your research, but farmers still need such information to properly adopt the technology.

## <STEP-3> CHOOSE APPROPRIATE MEDIA

There are different types of extension materials such as brochure, leaflets, poster or videos. Each type has its own advantages and disadvantages. Whenever you are starting extension material development, you have to select a suitable type of media.

Brochure and booklet are easy to produce with affordable cost compared to other types. They can be developed into high quality extension material without much experience. The advantages and disadvantages of different media are summarized below.

Brochure (typically A4 size-threefold, duplex printing)

<i>Advantages</i>	<i>Disadvantages/Considerations</i>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Easy to produce</li> <li><input type="checkbox"/> Low cost</li> <li><input type="checkbox"/> Easy to distribute</li> <li><input type="checkbox"/> Easy to read</li> <li><input type="checkbox"/> Can be taken home to read repeatedly</li> </ul>	<ul style="list-style-type: none"> <li>■ Little information. (It may need supplemental guidance)</li> <li>■ Only for literates</li> </ul>

Booklet (typically A4 size-centerfold, duplex printing, 8-12 pages)

<i>Advantages</i>	<i>Disadvantages/Considerations</i>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Easy to produce</li> <li><input type="checkbox"/> Low cost</li> <li><input type="checkbox"/> Easy to distribute</li> <li><input type="checkbox"/> Can be taken home to read repeatedly</li> <li><input type="checkbox"/> More information than brochure.</li> </ul>	<ul style="list-style-type: none"> <li>■ A little harder to approach</li> <li>■ Support by lecture or other means may be required to convey more detailed information</li> <li>■ Only for literates</li> </ul>

Poster (typically A3 or A2 size)

<i>Advantages</i>	<i>Disadvantages/Considerations</i>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Can be accessed by many audiences</li> <li><input type="checkbox"/> Low cost</li> <li><input type="checkbox"/> Easy to distribute</li> <li><input type="checkbox"/> Suitable for illiterates</li> </ul>	<ul style="list-style-type: none"> <li>■ Less information</li> <li>■ Require graphical skills</li> </ul>

Video (5 to 20 minutes)

<i>Advantages</i>	<i>Disadvantages/Considerations</i>
<ul style="list-style-type: none"> <li><input type="checkbox"/> More practical information</li> <li><input type="checkbox"/> Easy to understand</li> <li><input type="checkbox"/> Suitable for illiterates</li> </ul>	<ul style="list-style-type: none"> <li>■ High cost</li> <li>■ Require equipment</li> <li>■ Require video production skills</li> <li>■ Require script writing skills</li> </ul>

Information contained in extension materials has both advantage and disadvantage and it also determine the type of media. More information does not always mean more information transferred. Approachability is the key for transfer of information. That is why we should consider 'user-friendly design' in developing extension materials.

If some length of explanation is required, a booklet could be a better choice. If it is possible to condense the information into a few photos/drawings and short descriptions, a brochure may be appropriate.

The following sections explain how a researcher designs brochure without special equipment.

## **<STEP-4> CHOOSING APPROPRIATE LANGUAGE**

Language used for the extension material must be selected according to the purpose and target. If the material is for farmers/pastoralists, it is recommended to use Amharic and local languages, and avoid technical/scientific terms, which must be translated into plain local terms. If it is for extension personnel, English and Amharic or other local languages with technical/scientific terms may be necessary for conveying detailed information of the technology.

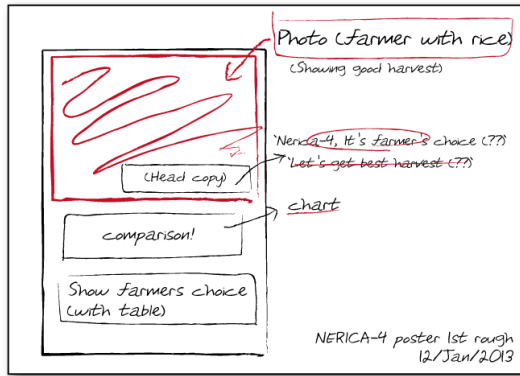
Gender consideration in the use of languages is also an important aspect to be reminded in extension material development. Careful use of languages is recommended to avoid any terms and expressions, which exclude any member of the farming communities from access to technologies.

Some technical aspects may be difficult to express in sentences and need to be supplemented graphically.

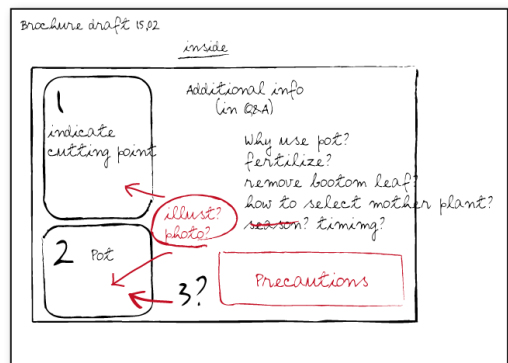
## **<STEP-5> DESIGNING EXTENSION MATERIAL**

### **DRAFTING A LAYOUT**

Sketch a rough design of your extension material before typing sentences or taking photos or preparing graphics. Write down all the points and pictures and/or drawings you want to include on the paper. Arrange them in order to determine appropriate amount of text, number of pictures/drawings, size, balance and contrast among them. Make the design easy to understand as well as attractive.

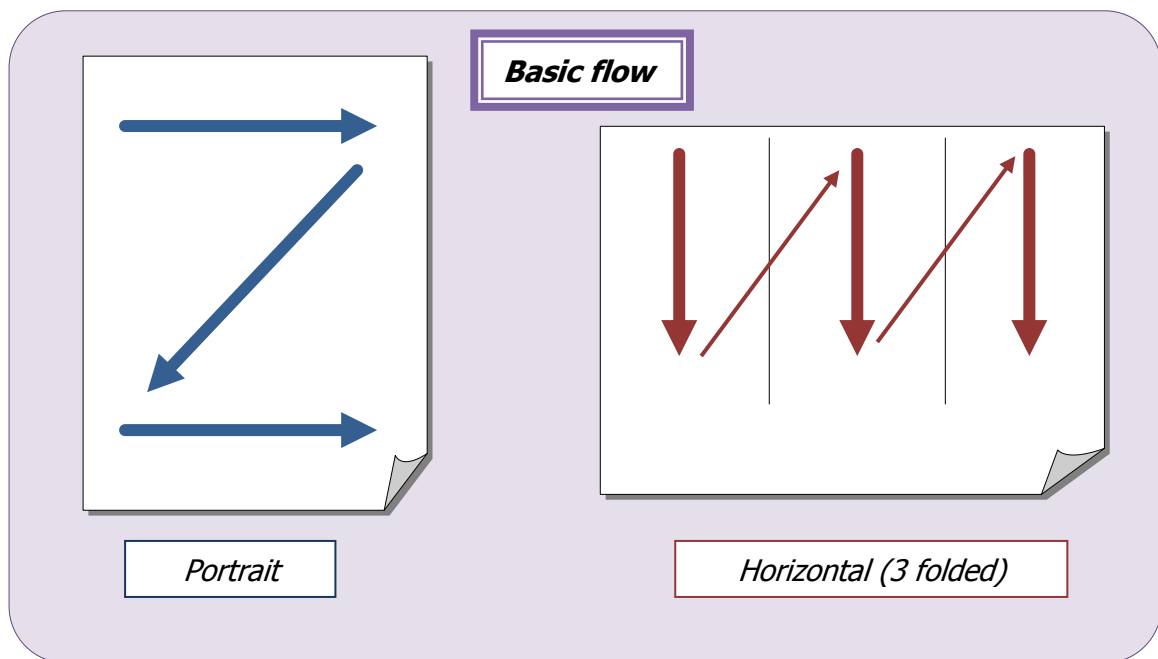


*Jotting will help you to straighten your idea*

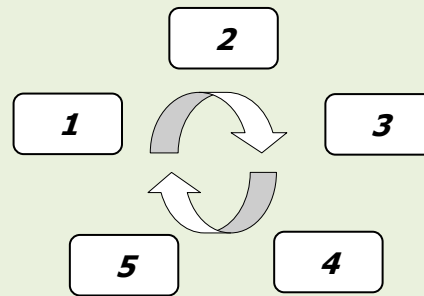
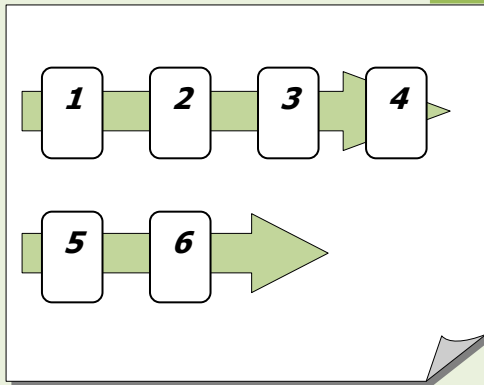


## CONSIDER FLOW OF INFORMATION

Normally, human eyes go to the upper left of a paper. Then it move to the right then down to the left like drawing 'Z'. Therefore, it is better to have arrangement of the information on the material following 'Z' shape, which will lead readers easy to follow the message of the information. The other option is to follow top-down and horizontal approach as shown below.



## Variation



Using arrows can also lead readers to follow the flow of information in the material.

## MAKE IT ATTRACTIVE

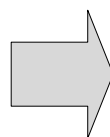
During designing the layout, you may face a challenge of 'how to present the information'. Some information is suitable to be expressed in words and some in graphics. To show the points clearly that you want to emphasize, it is very important to create contrast in the space (*See 4 Samples*).

### Taking photos

Photos are very effective means for conveying message if they are taken with a purpose. In other words, photos without clear purpose have no or negative effects. When you take or select photos, you should be conscious about what you want to express, for example, appearance, shape, structure, or something else. Once the purpose of the picture becomes clear, some techniques of photography help clarify the purpose further. The followings are useful tips for taking photo.



*Tips for photo*



*Zooming up (or trim, blowup) can make an object (aim) clear*



*Check the direction of sun light (shadow) and background*



*Use a white paper as background to make the outline of the object clear.*





*Surroundings*



*Arrangement*



*Unit*



*Close up*

*Decide angle, size and arrangement according to what you want to show*

### Use the internet

Internet is a useful source to develop extension materials. A huge number of reports, data, photos and illustrations are available online and some of them are free to use.

However, all the information on the web – composition, data, photo, drawing, illustration – is protected by copyright. Even if it is written `free`, it only mean that author abandons the right temporarily for only a certain purpose. There are various copyright restrictions for using materials from internet. Such rules are stated somewhere in the web page. Please pay attention on these rules carefully. If there is no description of copyright, any materials on the page is basically not usable.

## <STEP-6> CHECKING YOUR DRAFT

At this stage before getting it multiplied, it is important to check the draft on concept, contents and finishing work using the following checklist.

### QUICK CHECKLIST

- Is the aim of the extension material clear?
- Is the story simple and clear?
- Are effects, reasons and actions are clear?
- Is the flow of information natural?
- Is the included information convincing?
- Is the information attractive for target audience?
- Are the main points emphasized well?
- Is the selected medium appropriate?
- Are the language and terms used appropriate for the target?
- Is the message shown by each photos/illustrations clear?
- Is the page margin appropriate?
- Is there no spelling errors?

## <STEP-7> TESTING THE MATERIAL

When the draft is ready and it is checked, it should be reviewed by your fellow researchers and tested by DAs and farmers. If comments are given for improvement, revising the draft and repeat the checklist and testing before going for producing the publication. If there is no comment, test if intended audiences understand what you wanted to communicate by your extension material. If they do not get you right, go back to the 'quick check list' once again.

Some sample extension materials are shown in the Appendix.

## 4 SAMPLE OF DEVELOPED EXTENSION MATERIALS

SAMPLE-1 <RICE VARIETY> POSTER\_1 (A3 SIZE)



**NERICA-4**  
It's farmer's choice

**Days to 75% maturity**

**Grain yield /ha**

Days to 75% maturity	NERICA-3	NERICA-4	CUKIT	FKRS	LOCAL
131 days					
		34Q			

**Mark by Farmer's Criteria**

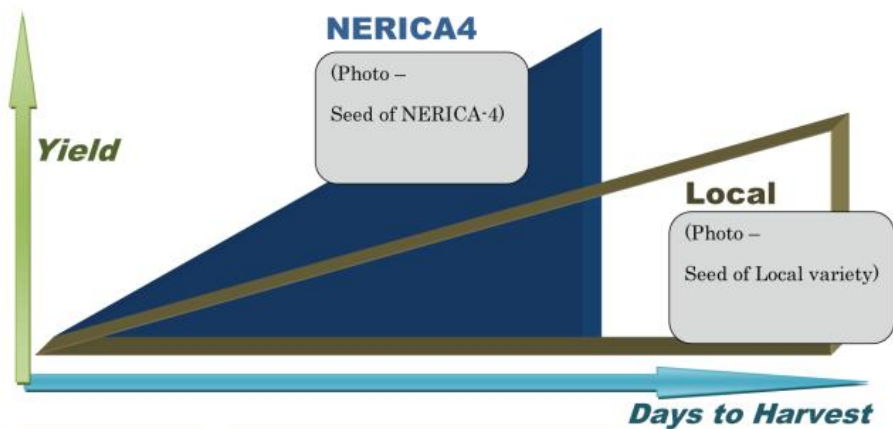
Criteria	Varieties				
	NERICA-3	NERICA-4	CUKIT	FKRS	LOCAL
Plant height		✓		✓✓	✓
Panicle length		✓		✓	
Seed color	✓	✓	✓	✓	
Disease	✓	✓	✓	✓	
Yield		✓✓✓		✓	

Data are based on the research at Benishangul-Gumuz state by Assosa Agricultural Research Centre in 2012.

Title	Evaluation and selection of rice varieties
Effect	More productive rice variety is introduced
Reason	Research has revealed the most productive rice variety
Action	Introduction of NERICA-4

<b>Concept</b>	■ <i>Simple and strong message with photo</i>
<b>Note</b>	<ul style="list-style-type: none"> <li>■ <i>Visualize the information with tables.</i></li> <li>■ <i>No detailed description for simple and straight message.</i></li> </ul>





Criteria	Varieties				
	NERICA-3	NERICA-4	CUKIT	FKRS	LOCAL
Plant height		✓		✓✓	✓
Panicle length		✓		✓	
Seed color	✓	✓	✓	✓	
Disease	✓	✓	✓	✓	
Yield		✓✓✓		✓	

Title	Evaluation and selection of rice varieties
Effect	More productive rice variety is introduced
Reason	Research has revealed the most productive rice variety
Action	Introduction of NERICA-4

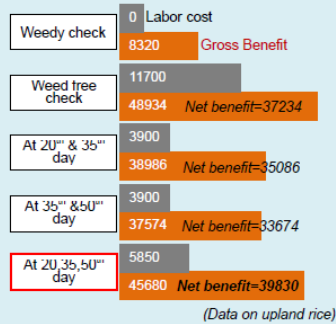
<b>Concept</b>	■ <i>Simple and strong message with photo</i>
<b>Note</b>	<ul style="list-style-type: none"> <li>■ <i>Version Different from Example-1.</i></li> <li>■ <i>Simply compare Nerica-4 and local varieties</i></li> <li>■ <i>Using photo of seed to make comparison of the two varieties</i></li> </ul>

# SAMPLE-3 < WEEDING TIME AND FREQUENCY IN RICE PRODUCTION > 3 FOLDED BROCHURE

## Cover

### How was research done? And how was the result obtained?

The field experiment was conducted for the in 2011 cropping season at farmer's fields. The set of treatments replicated in three different locations in Fogera and total of 5 hand weeding treatments were used.



As chart above shows, weeding at 20<sup>th</sup>, 35<sup>th</sup> and 50<sup>th</sup> day produced highest net benefit. (Net benefit = Gross benefit - Labor cost) Almost same result obtained on lowland.

## Weeding Calendar

for more cost effective weeding on rice field

For further information

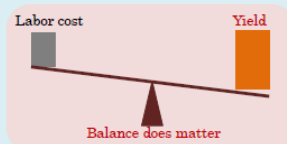
## Inside

### What is the most cost-effective weeding?

Rice production and weed control are often synonymous. It is impossible to produce rice economically without a well planned weed management program.

- ✓ Daily weeding enables us to get maximum yield but labor cost will be very high.
- ✓ No weeding charges no labor cost but yield must be very poor.

So, what shall we do?



According to the recent research by Adet ARC in Amhara region, weeding at 20, 35 and 50 days after emerged are the most cost effective way for the rice field. Weeding more or less would be not economical.

### Weeding Calendar

Day 0	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	36	37	38	39	40	41
42	43	44	45	46	47	48
49	50					

#### How to use 'Weeding calendar'?

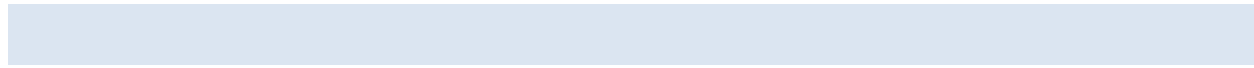
1. Put the date of emerged day on space 'Day 0' and put the day of the week (Monday, Tuesday...) on top row.
2. Put the date which starts from emerged day on other spaces and complete your own calendar.
3. You can find recommended weeding day easily.

Tuesday	Wednesday	Thursday	Friday
14	15	16	17
21	22	23	24

(Example: in case if emerged day is 14<sup>th</sup> day, Tuesday).

Title	Cost effective weeding in rice fields
Effect	Weeding cost will be reduced (Effective weeding with higher yield)
Reason	Research has revealed the most cost effective timing of weeding
Action	Weeding at 20 <sup>th</sup> , 35 <sup>th</sup> and 50 <sup>th</sup> days after germination

<b>Concept</b>	<ul style="list-style-type: none"> <li>■ Put main message – recommended weeding timing – into a calendar.</li> <li>■ Attractive and catchy title.</li> </ul>
<b>Note</b>	<ul style="list-style-type: none"> <li>■ Put the convincing data on the first page for easier understanding</li> </ul>





**SAMPLE-4 <CUTTING METHOD FOR STEVIA PROPAGATION> 3 FOLDED BROCHURE**

*Cover*


Stevia doesn't produce fertile seed in Ethiopia, asexual propagation such as cutting is the only option for their perpetuation.

*Supplementary information*

*Add contact address etc*

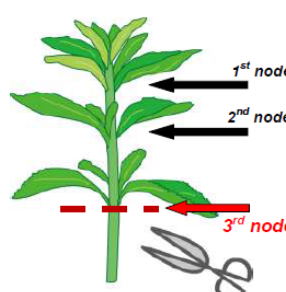
**Cutting method**

*For Stevia propagation*

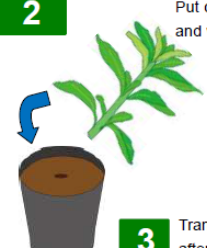


*Inside*

**1** Cut on **3<sup>rd</sup> node** of healthy Stevia mother plant.



**2** Put cutting into pot and watering well



**3** Transplant to field after it has rooted

**Frequently Asked Questions**

**Why should we use pots?  
Can't we plant to field directly?**

Description

**Should soil in the pot fertilized?**

Description

**Should I remove the bottom leaf of the cutting?**

Description

**Can I put many cuttings into one pot?**

Description

**How to select mother plant?**

Description

**When is the most suitable time for cutting?**

Description

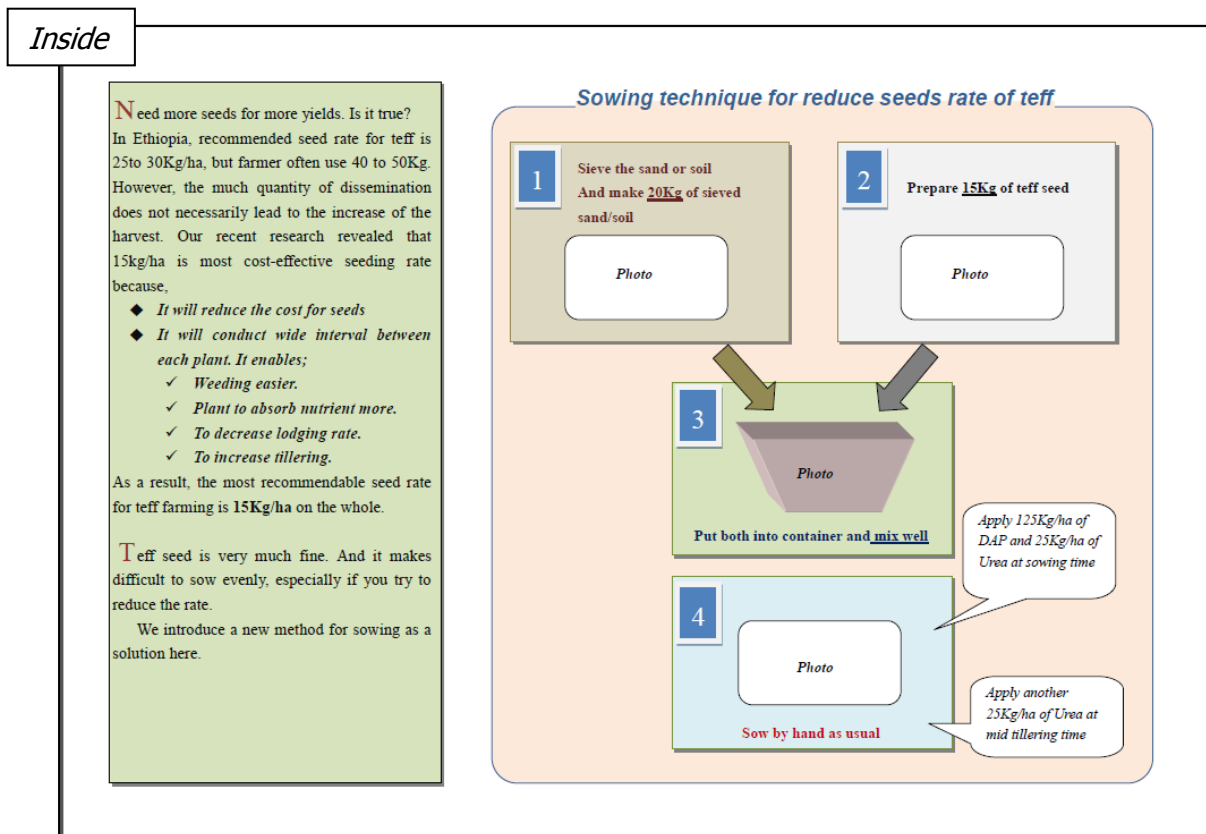
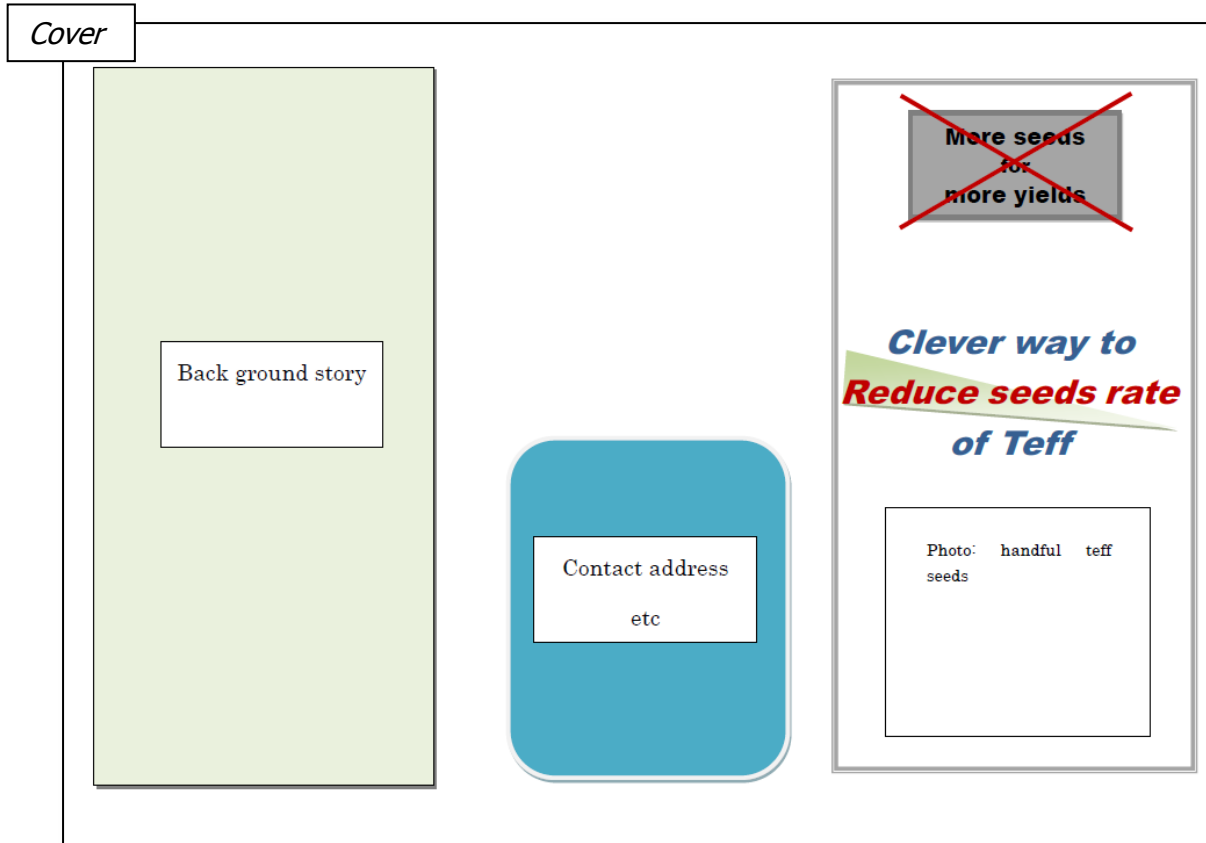
**Condition and Precaution**

Description

Title	Cutting Method for Stevia Propagation
Effect	Seedling production will be more successful
Reason	Research has revealed the best way of cutting for seeding production
Action	Cut on 3 <sup>rd</sup> node of mother plant for seedling

<b>Concept</b>	<ul style="list-style-type: none"> <li>■ Show cutting position and procedure with illustration (or photo).</li> <li>■ Put supplementary information in Q &amp; A style.</li> <li>■ Simplified title.</li> </ul>
<b>Note</b>	■ Put the convincing data (or background) on 2nd page to be understood.

SAMPLE-5 <SEED RATE OF TEFF USING SPREADER> 3 FOLDED BROCHURE



Title	Seed rate of Teff using spreader
Effect	Lower seed rate for higher yield and easy sowing
Reason	Research has revealed the effective lower seeding rate with spreader
Action	Introduction of lower seed rate with spreader

<b>Concept</b>	<ul style="list-style-type: none"> <li>■ Show procedure with photo.</li> <li>■ Attractive title.</li> </ul>
<b>Note</b>	■ Put the convincing data on spread pages to be understood.

*Memo*

*Memo*

*Memo*

# FRC

Empowering farmers' innovation



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