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On: 08 May 2013, At: 06:18

Publisher: Routledge

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Development in Practice

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/cdip20>

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Jeffery Bentley & Eric Boa

To cite this article: Jeffery Bentley & Eric Boa (2013): The snowman outline: fact sheets by extensionists for farmers, *Development in Practice*, 23:3, 440-448

To link to this article: <http://dx.doi.org/10.1080/09614524.2013.781129>

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PRACTICAL NOTE

The snowman outline: fact sheets by extensionists for farmers

Jeffery Bentley and Eric Boa

Writing for smallholders in developing countries is an art that demands clear prose, a sound idea, and a logical outline. Although extension agents are often unaccustomed to writing, and usually need a sympathetic editor, extensionists know the target audience better than agricultural researchers or professional communicators. A one-page, 300-word fact sheet is a suitable format, allowing extensionists to write their insights for farmers. The fact sheet must be validated by farmers, who read it and review it for prose and concepts.

The “snowman” is a logical outline in three-parts: head (problem), middle (agro-ecological background), and main part (the solution). The middle section is the hardest for potential fact sheet authors to grasp, but it is also the most important. Anticipating the information that will convince the reader to try the recommendation requires a good knowledge of the audience. The farmers are not a passive audience. Smallholders can be engaged in logical, creative ways, even in writing.

La silhouette d'un bonhomme de neige : les fiches d'informations produites par des vulgarisateurs pour les fermiers

Ecrire pour de petits agriculteurs dans les pays en voie de développement est un art qui exige de la clarté dans la prose, une idée valable, et une forme logique. Malgré le fait que les éducateurs n'ont pas l'habitude d'écrire et qu'ils ont souvent besoin d'un éditeur compatissant, les vulgarisateurs connaissent mieux que les chercheurs agricoles ou les communicateurs professionnels leur public cible. Une seule page de 300 mots est un format approprié à la fiche d'informations, qui permet aux vulgarisateurs de transmettre leurs perspectives aux fermiers. La fiche doit être validée par des fermiers qui la lisent et qui passent en revue sa prose et ses idées. Le 'bonhomme de neige' fournit une silhouette logique en trois parties : la tête (le problème), le centre (contexte agri-écologique) et le corps (la solution). Le contexte est la partie la plus difficile à comprendre par les auteurs potentiels de fiches d'informations, mais il est aussi la plus importante. Anticiper les informations qui convaincront le lecteur d'essayer la démarche recommandée exige une bonne connaissance du public. Les fermiers ne sont pas des lecteurs passifs. On peut impliquer les petits agriculteurs d'une façon logique et créative, même à l'écriture.

El esbozo en forma de muñeco de nieve: hojas informativas escritas por extensionistas para pequeños productores

Escribir para un público de los pequeños productores de países en desarrollo es un arte que exige prosa clara, ideas firmes y un esbozo lógico. Si bien los agentes de extensión no están

acostumbrados a escribir y, en general, necesitan de un buen editor, conocen al público objetivo mejor que los investigadores en agricultura o que los comunicadores profesionales. La hoja informativa de una cuartilla y de 300 palabras constituye un formato adecuado que permite a los extensionistas difundir sus hallazgos entre los campesinos. Dicha hoja informativa debe ser validada por los productores, quienes la leen y la valoran de acuerdo a su claridad y a los conceptos que contiene. El esbozo lógico consta de tres partes en forma de “muñeco de nieve”: el encabezado (presentación del problema), la parte central (exposición de los antecedentes agroecológicos) y la parte final (propuesta de solución). Para los potenciales autores de las hojas informativas, la sección de antecedentes representa la parte más difícil de escribir pero también la más importante. Se requiere de un buen nivel de familiaridad con el público para ser capaz de anticipar la información que impulsará al lector a poner en práctica las recomendaciones. Los pequeños productores no son un público pasivo. Participarán en actividades lógicas y creativas, aun cuando éstas impliquen la escritura.

A apresentação do homem das neves: informes produzidos por extensionistas para produtores rurais

Escrever para pequenos produtores de países em desenvolvimento é uma arte que exige um texto claro, uma ideia bem fundamentada e uma apresentação lógica. Embora agentes de extensão não estejam muito acostumados a escrever, e normalmente precisam de um editor compreensivo, os extensionistas conhecem o público-alvo melhor do que os pesquisadores agrícolas ou comunicadores profissionais. Um informe de uma página e 300 palavras possui uma forma adequada, permitindo aos extensionistas escrever suas ideias para os produtores rurais. O informe deve ser validado pelos produtores rurais, que o lêem e revisam o texto e os conceitos. O “homem das neves” é uma apresentação lógica em três partes: cabeça (problema), meio (contexto agro-ecológico) e parte principal (a solução). A seção do contexto é a mais difícil para compreensão dos autores em potencial dos informes, mas é também a mais importante. Antecipar as informações que convencerão o leitor a tentar seguir a recomendação exige bom conhecimento sobre o público. Os produtores rurais não são um público passivo. Os pequenos produtores podem ser engajados de forma lógica e criativa, até mesmo por escrito.

KEY WORDS: Environment (built and natural) – Agriculture; Methods; Social sector – Education; Technology – Media

Introduction

Family farmers in developing countries often find extension literature difficult to read, because of prose style, content, and even how the material is outlined.

This happens for two reasons. First, the researchers who generate new ideas for farmers are often too far removed from their audience, socially and culturally. Professional communicators who are given the task of packaging research for farmers seldom have had the benefit of being involved in the research. Second, the extension agents in the field often do have innovations which have been honed by real world experience, but extensionists are seldom experienced writers and are not encouraged to write for farmers. We propose a solution, helping experienced extension agents to write for farmers.

Extensionists know their audience, and have usually tried out several innovations with farmers which they can describe well, though their scientific knowledge may be weak or out

of date (Van Mele et al. 2011). But agricultural extensionists are not professional writers. Extensionists are often engaging speakers, but when writing they adopt a heavy, lifeless prose style that comes from thesis and report writing. Bad writing for many of them is a learned incompetence (thanks to Graham Thiele for this insight). Extensionists need encouragement to write for a friendly yet critical audience. But writing is still a difficult craft. Speaking is instinctive; writing is not (Pinker 1994).

Writing for low-literate audiences should focus on real life needs, avoid distracting information, arrange content so it is logical, and write as one talks (Carstens 2004). These are simply general tips for good writing, yet they are often neglected in writing for farmers.

Since 2005 the authors have been experimenting with a way to share information with farmers in writing, by helping agronomists to write fact sheets, teaching extensionists to write one-page fact sheets during a three-day course (see Table 1). Here we describe the fact sheet method, the topics, and how the training encouraged the extensionists to write for farmers.

Mobile phones, video, radio, and other information and communication technology (ICT) can target audiences in local languages, at low cost, over remote areas (Davis 2008; Van Mele,

Table 1: Fact sheets written during a CABI course and later

Country	CABI courses to end 2011	Fact sheets written during CABI course	Fact sheets written separately after course	Total number of fact sheets written
Bolivia	6	64	59	123
India	1	6	6	12
Kenya	2	13	0	13
Nepal	2	6	0	6
Nicaragua	5	64	15	79
Sierra Leone	1	13	0	13
Trinidad and Tobago	1	25	0	25
Uganda	1	12	6	18
Vietnam	1	3	44	47
Total	20	206	130	336

Table 2: Fact sheet authors' profession or main area of expertise

Profession, main area of expertise	Number of authors
Extension	177
Researcher	56
Technical support	46
Teacher or student	26
Farmer	7
Agrodealer	2
Total	314

Some authors wrote or co-wrote more than one fact sheet. This table includes authors who did not attend the CABI courses and later collaborated with those that did.

Wanvoeke, and Zossou 2010). Printed material is cheap, durable, and can be saved and re-read (Carstens 2004). Fact sheets can be placed on the web, and can be re-packaged for other media, such as radio scripts.

Most people who take the fact sheet course are extensionists, but several scientists and researchers have also written fact sheets, as have farmers and agrodealers (Table 2). The course also covers formatting the fact sheets with basic tools in Microsoft Word and explains how to frame photos and captions in tables.

Table 3: The snowman model used to outline pest and disease fact sheets.

Part	Purpose	Comments
1 Head	The problem: how to recognise a disease and symptoms, for example, mentioning any local names, or how to diagnose the problem	Extensionists often get this wrong, starting with the advice, without explaining the problem.
2 Middle	Background information on biology or ecology or other facts which form a bridge between the solution and the problem, explaining for example that a particular disease is vectored by an insect, which must be controlled to manage the disease	This is crucial information that tells the reader why the solution will work. It is also the hardest point to get across to the fact sheet writers.
3 Main part	How to solve the problem: a description of what to do, a set of clear instructions recommendation for managing the problem	This is usually the easiest for the extensionists to understand.

Table 4: Fact sheet topics and crop category

Fact sheet topic / category	Commodities (e.g. coffee)	Flori-culture	Fruit Trees	Horti-culture	Staples (e.g. rice)	Other	Total
Insect pests	16	0	38	25	24	7	110
Fungal diseases	11	8	31	26	24	2	102
Bacterial diseases	0	1	7	7	4	0	19
Virus diseases	0	0	4	6	4	1	15
Phytoplasma diseases	1	0	3	1	3	0	8
Nematodes	2	0	1	4	0	3	10
Weeds	2	0	0	0	2	1	5
Soil and water management	2	0	0	5	2	4	13
Seed	2	0	1	4	3	0	10
Post-harvest	0	0	1	2	0	3	6
Other	2	1	7	5	11	12	44
Total	38	10	93	85	77	33	336

Note: Other topics included damage caused by animals to crops (e.g. birds, monkeys), bees and their important as pollinators, a mite pest of bees, animal disease and management, use and handling of pesticides, how to take samples, and post-harvest treatments. The ‘other’ category includes forest trees and spice crops as well as a few animal and general fact sheets e.g. how to distinguish different types of wilts.

In this paper we propose writing extension messages using the ‘snowman outline’. This has three parts: a head (the problem), middle (background), and the main part (solution) (Table 3). A snowman made from three balls of increasing sizes is a memorable way to present the structure of a fact sheet, to organise ideas in a way the farmers find logical.

Fact sheet topics are shown in Table 4, grouped by category of crop. Pests and diseases are the most common topic (nearly 70 per cent of fact sheets) yet there are many fact sheets on other subjects, including soil and water management, seeds, and even livestock and bees. The fact sheet model is suited to all agricultural topics.

Snowman outline

Head: the problem

Smallholders in developing countries may find extension literature difficult to understand if it is poorly outlined. Most extension messages discuss recommendations. But the message should start with the problem, to focus the audience’s attention, before going on to the solution. For example, an extensionist should start by reminding farmers of some of the common diseases of fruit trees, and then talk of how to manage them with a home-brewed fungicide, like Bordeaux mixture. One should not start by simply discussing the ingredients of Bordeaux mixture.

The head of a fact sheet for farmers is the smallest of three parts of the snowman model. Extension literature often starts with a scientific name or other pedantic information, which may discourage readers. Instead, the first sentence should capture the audience’s attention by describing the problem and why it is important. For example, “*coffee trees often begin to produce less after they are several years old*”. If you make your living from growing coffee, that sentence will catch your eye.

The head can mention the common names of a crop pest or disease. It can also describe the symptoms. Even marketing problems can be introduced in the head (e.g. “*damaged peaches sell for less than unblemished ones*”). The head helps the farmers to diagnose the problem, i.e., to know if their crop suffers from it. For example, if your potatoes are wilted, and you know that the crop was well watered, the plants may well have bacterial wilt.

Middle: the background

Many solutions are counter-intuitive if they lack some specific background information. Before discussing the solution to an agricultural problem, the extension message needs a bridge statement to connect the solution to the problem. The middle part of the snowman outline explains missing information.

The middle section is usually longer than the head and describes basic information that the audience *may not know* about the fact sheet topic. Of course, the author must know the audience well enough to know what they do and do not know, to walk that thin line between boring them and confusing them. The simple phrase “*old wood grows less coffee than new wood*” prepares the reader to understand something later which otherwise would seem counter-intuitive. The background section comes in the middle, but the authors should write it last, when they have sharpened the ideas they will recommend.

For a fact sheet from Uganda on the banana weevil, for example, the background explains that the weevil needs moisture to live, and especially favours moist banana stems. This helps to suggest some control techniques, such as cleaning the mulch away from the stem and (after harvesting the fruit) cutting the stem into small pieces so it will dry faster.

Main part: the solution

The main section is about half of the text. If the fact sheet is about pests or diseases, this section describes management techniques, i.e. what to do about the problem, for example how to cut coffee trees back so that they yield more or treat seed to prevent a fungal disease. This section can be one or two specific technologies, e.g. how to apply vegetable oil to maize silk, to kill corn worms; or how to sterilise the soil for growing cut flowers.

A fact sheet can also describe how to make something, such as Bordeaux mixture or bokashi (a composted fertilizer). Sometimes the extensionists write a list of several recommended practices (e.g. crop rotation, clean seed, resistant varieties, and the right planting date). However, it is preferable to avoid too long a list, so that the recommendations can be explained well.

Some examples

In a recent fact sheet from Peru, the extension agent started by listing several serious diseases of fruit trees. As background (the middle part of the snowman), he explained that these diseases were transmitted during pruning. The final section on management discussed disinfecting pruning tools and some common low-toxic chemicals which could be painted onto the pruning wound to keep out disease-causing organisms. Painting the wound of a tree is a counter-intuitive solution, unless you know that fungi enter the tree through the fresh wound.

A fact sheet written in Trinidad and Tobago on virus-related wilt disease in pineapple recommends controlling ants and aphids. That advice would be completely counter-intuitive, if not for the background section of the fact sheet, which explains that the wilt disease is spread by aphids, which are tended by ants.

Editing, illustrations, and layout

After the extensionists write their first draft, in the snowman outline, the course facilitators edit their prose for clarity. Three to four hundred words are enough to introduce, explain, and address a problem on one page. Titles need to be short. Four words is a good limit. All of the words need to be immediately meaningful to the audience.

Poor layout and photographs can also confuse readers with limited years of schooling. Thanks to digital cameras, much extension literature is now heavily illustrated, yet photos need to be clear and sharp. People with only a few years' schooling often find text formatted in columns and tables hard to read.

Once the basic outline of the topic has been agreed, the authors type the text into a computer and the text is formatted and laid out using a template shown in Figure 1. Large type is useful when writing for a poor, rural audience where many middle aged people need eyeglasses but do not have them.

One or two photos are enough for one fact sheet. Any more than that simply clutters it up. An ideal photo shows the readers something new, such as a new tool for harvesting potatoes. Entomologists invariably want to show the insect (often a pinned adult, even if the pest stage is the larva). Plant pathologists include microscopic details of fungi, such as spores. However, a photo of the pest or the pathogen are often of little value to the farmer, who may well know what the bugs look like, but needs a picture of the control technique.

The problem (the head of the snowman) is a good topic for a photo if there are many local words for the problem. The photo can disambiguate a plant or an insect, for example. Photos help if people do not recognise the problem, such as nematode galls on roots. A photo of

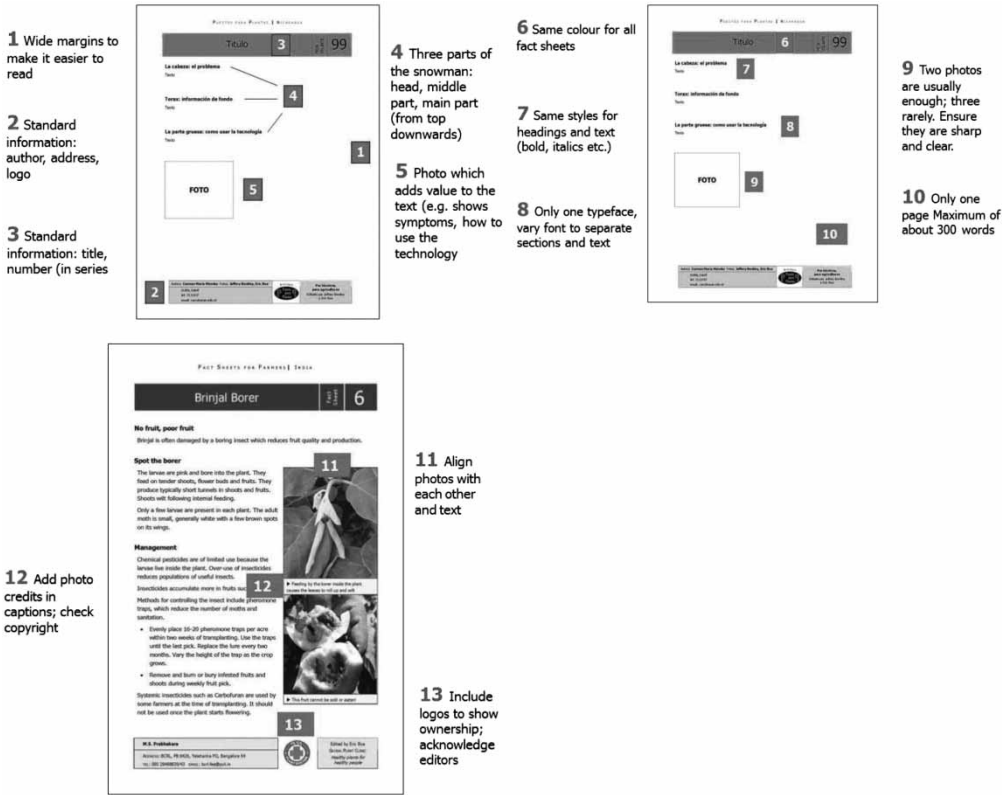


Figure 1: Layout of fact sheet using Microsoft Word

root nodules alongside the gall photo helps to distinguish damaging nematode galls from nutrient rich rhizobium nodules. The photo helps to identify the fact sheet topic.

The most useful fact sheet photos illustrate something practical, such as how to make a seedbed, or what a potato silo looks like, or what colour a home-brewed sulphur and lime mix should be when boiled.

Sometimes we include photos that we call decorations. A photo of a healthy peach, for example, catches the reader’s eye. A good caption summarises a key point of the fact sheet rather than just repeating what the reader can already see, as in “*healthy peach*”. It is better to say something like “*early application of fungicide helps to harvest healthy peaches*” to summarise a main point from the fact sheet.

In *Picture on a Page*, Harold Evans (1978) says that captions should avoid stating the obvious. A caption should add information and explain what cannot be seen. For a picture of a person working compost into the soil, “*improving soil structure*” is a better caption than “*digging with spade*”. A photo of leaf spots can have a caption that explains how the symptoms develop, rather than simply saying “*leaf spots*”.

Farmer peer review, or field testing

The authors of the fact sheets validate them to make sure they are clear and understandable to the target audience. We call it a farmer peer review. Each fact sheet author goes to the field and asks several smallholder farmers to read the fact sheet that he or she has just written. The farmer reviewers

read the fact sheet aloud or silently. If they say they cannot read, then the author reads the fact sheet to them, but it must be read word for word, not embellished. The fact sheet may also be translated verbatim into a local language, for a farmer who does not speak the national language. The author then asks the reviewer for comments. What was the fact sheet about? Was the fact sheet clear? Were there any words the reader did not understand? Does the reviewer want to add or comment on the content of the fact sheet? Farmer peer review is a moment of revelation for most authors: it is the first time they have asked farmers to comment on an extension message.

One person who took our course in Nicaragua wrote a fact sheet on mildew in squash, which she then took to the field and asked three people to read. The first man she met said he couldn't read. The author read him the paper out loud. He listened carefully, seemed interested, and said that the fact sheet was fine. But the second reviewer, another smallholder, read the paper himself. He said that the fact sheet correctly stated that the fruits were of poor quality but then he added "the diseased fruits are deformed". The author edited her fact sheet to include this phrase. The third reviewer read the fact sheet out loud, stumbling over the word "lombrihumus". The farmer reviewer did not know this word, so the author replaced it with "organic fertilizer."

Farmer peer review can also help to correct factual mistakes. In Kenya, three researchers took a fact sheet to the market in Kamakuywa. A farmer read the fact sheet out loud in English, with a crowd gathering around him. Then in Swahili he argued that the fact sheet recommended a needlessly high dose of fungicides to control potato late blight. Much to their credit, the three researcher-authors listened carefully and later recalculated their figures and changed the recommended dose.

Peer review also helps to sharpen vocabulary. The flea beetle (*Epitrix* sp.) is called *piki piki* in much of Bolivia. But around Comarapa, Bolivia people call it *pulguilla* ("little flea"). One extensionist had used both names in his factsheet, but after the farmer peer review, he edited his factsheet to emphasise the name *pulguilla*.

Farmer peer review also helps authors to realise that low-literate audiences have problems with seemingly simple devices like tables and parenthesis. It is best to edit out parenthetical remarks, making separate, short sentences. Fact sheets should avoid tables and diagrams, because they are hard to read, but if they are included, they need to be as clear and simple as possible.

In Kenya in 2011, three of our colleagues from CABI wrote a fact sheet that included a diagram (Figure 2). We told them it was too schematic and that farmers would not understand it. Literate people learn how to read diagrams in school, just as they learn to read letters. During the farmer peer review the authors confirmed that farmers could not read the diagram, and we

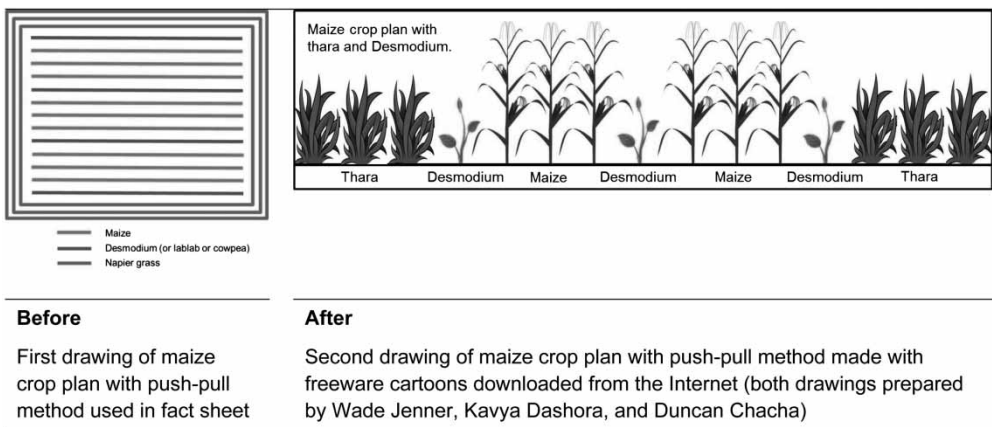


Figure 2: Illustrations improve as a result of farmer peer review

suggested another style, with more pictures, looking down the field (Figure 2). This second diagram needs to be peer reviewed, but is a big improvement.

Results and conclusions

It may be obvious that an extension message should be clearly written and have an appropriate technical message. It is less obvious that the outline of a message also matters. The snowman is a clear, practical way of organising an extension message.

Of the three parts, the middle section (background) is the most difficult to explain to extensionists. Some extension literature on insects includes largely irrelevant background information, such as the number of days an insect lives in each stage, or the colour of the pupa. It is difficult for extensionists, researchers, and others to see their innovation from the farmers' point of view, and to grasp the missing bit of background information that will make this technique convincing. Each of the three sections of the fact sheet needs to be laid out with a section heading and a clear title of its own. The photographs can illustrate any of the three sections.

Many extension recommendations are counter-intuitive. For example, if your potatoes are diseased, it makes no sense to worry about some tiny insects in the crop, until you know that the bugs are vectors of the disease. Any extension message can be made clearer by outlining it as a snowman, in three parts. Start by introducing the problem (the head); then, before proposing a solution (the main part), explain the missing background information that anticipates the solution (the middle section). The missing link between the problem and the solution is the type of agro-ecological information that various extension methods, including farmer field schools, provide by lengthy exercises and explanations (Bentley 2006). However, the agro-ecological information can also be given concisely, even in a short message, allowing creative, proactive smallholders to try the recommendations on their own.

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The authors

Jeffery Bentley (corresponding author) is an agricultural anthropologist. He has lived in Samoa, Portugal, Honduras, Peru, and Bolivia, and has been the lead editor on the fact sheets. <jeff@agroinsight.com>

Eric Boa is a plant pathologist by training, but his recent work is on plant health clinics for smallholder farmers. He has lived in Bangladesh, Indonesia, and Botswana.