Sharing Local Content in Local Voices (Podcasting)

A Guide to What? Why? and How?

David J. Grimshaw and Lawrence D. Gudza (2011)

PRACTICAL ACTION
Technology challenging poverty

Preface

- You should read this Guide if you wish to share knowledge with people living in poverty, often in remote rural areas, who have no access to electricity, telecommunications and local radio.

- The Guide contains information about the what? why? and how? of sharing local content in local voices.

- The Guide is published with a Creative Commons Licence. You are free to share, copy, distribute and transmit the work but you must attribute it to Practical Action and you must not alter or transform the work without seeking our permission.

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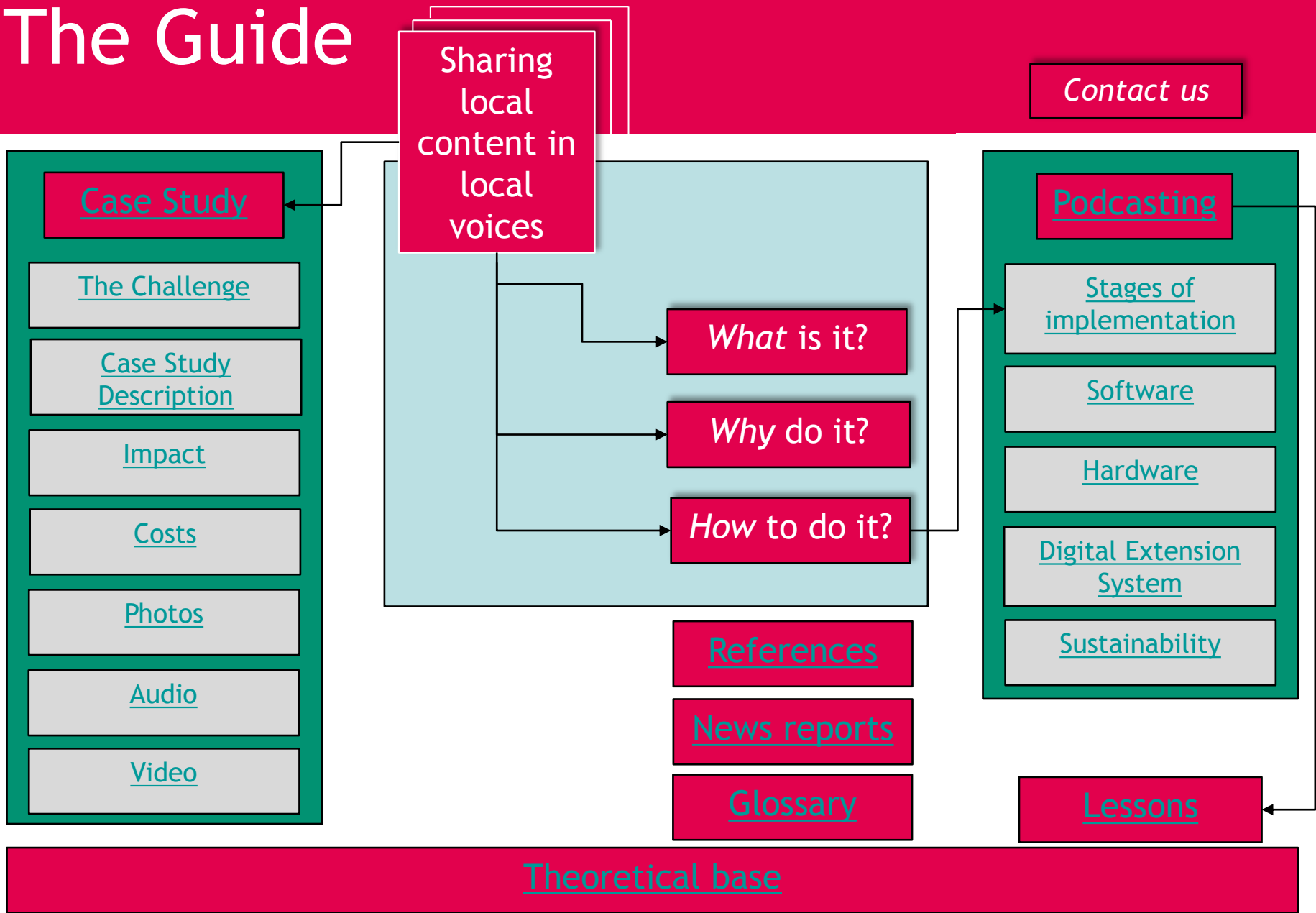Note: We sometimes refer to the technology used to deliver this as "podcasting".

The Guide: How to use it?

- The next page of this Guide has a diagram, which is effectively a table of contents.

- Unlike a book, however, this Guide does not have to be read sequentially. You can decide what to read and when to read it.

- The content is multi-media, with video, photographs, voice, and links to documents for further information.

- Navigation is via the links contained at the bottom of each page.

- If you click on Guide at the bottom of the page you will be returned to the diagram.

The Guide

Sharing local content in local voices

Case Study

- The Challenge
- Case Study Description
- Impact
- Costs
- Photos
- Audio
- Video

What is it?

Why do it?

How to do it?

Podcasting

- Stages of implementation
- Software
- Hardware
- Digital Extension System
- Sustainability

References

News reports

Glossary

Lessons

Theoretical base

Why do it?

"The gift of material goods makes people dependent, but the gift of knowledge makes them free …. "

Source: Schumacher (1973:136)

Why do it?

Heather Arney/WaterPartners International

⊙ "What if lessons are transmitted to them using some audio device so that they can learn while they walk?" says Grimshaw

Source: SciDev.Net (2008)

Waiting to talk...

In 2004, at a telecentre in Chanta Alta, Peru we observed that people queued for the telephone but did not use the Internet facility (e.g. for reasons of literacy). Voice was the media of choice for communication.

For more on the origins of the idea see News Report, BBC 2006.

Spot the technology

At the market in Chanta Alta, Peru we observed that the radio was the main communications technology in use.

So the idea was born to use voice media to share knowledge and information.

For more on the origins of the idea see News Report, BBC 2006.

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Challenges: Beyond Knowledge

The challenges of development is not only a lack of knowledge, but also the following:

- ◎ Coordination among development agents and the communities on the ground
- ◎ Availability of useful knowledge where needed
- ◎ Awareness of where knowledge can be found
- ◎ Available knowledge may not be relevant
- ◎ Language used for knowledge products is often inappropriate
- ◎ Formats are often inappropriate to the user
- ◎ Channels are often not tested for relevance and suitability

Challenges Facing Communities

- In Zimbabwe there has been no positive livelihood improvement resulting from extension services in the past 50 years.

- Extension officers follow their organisation mandates and not that of the communities' in:
  - Design, formatting, packaging and dissemination of knowledge and information
  - Use of brochures, posters and languages which local communities may not be able to read or understand.

Challenges Facing Communities

- Rural infrastructure where poor communities live is under-developed, for example there are no formal roads linking villages and communications infrastructure is non existent

- These remote communities have no access to markets

- Formal extension officers are demotivated and often the experienced ones seek greener pastures. This is often due to a lack of tools to do their job and poor remuneration

Challenges Facing Communities

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Audio

⟳ Listen to an example of a podcast
(1 min 45 sec)

Preparation of a fodder bank using sorghum, maize, soya and guar bean stova and grass. Also including preparation of feeding pens.

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Video

Watch the video taken in Guruve District (see Case Study) (3 mins 30 secs)
Sound is in the local Shona language, with English sub-titles

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Case Study: Zimbabwe

- In 2008/09 HIVOS supported a pilot project in Mbire District
- Since then the approach has been scaled up and rolled out in a number of areas – see Table 1
- This case study is based on the work in Mbire District (Map)
- The pilot was in two phases:
  - Phase 1: testing "second voice"
  - Phase 2: digital extension

Case Study: Zimbabwe

- Greatest challenges of disease etc. come at same time as challenge of access as roads are impassable.
- New crops needed for livelihood improvement – food security and feedstock for animals.
- For more information watch a video taken in Guruve or listen to a podcast.

Case Study: Geographical Areas

Table 1

Scale	Geographical Area
Pilot 2008	Mbire District Mashonaland Central
Project Roll Out	Guruve and Bindura – Mashonaland Central
Scaling Up	Gwanda rural – Matabeleland South
Scaling Up	Bulilima, Mangwe, Matobo and Gwanda
Potential Explosion	Chimanimani, Chipinge and Buhera South

Map of Northern Zimbabwe
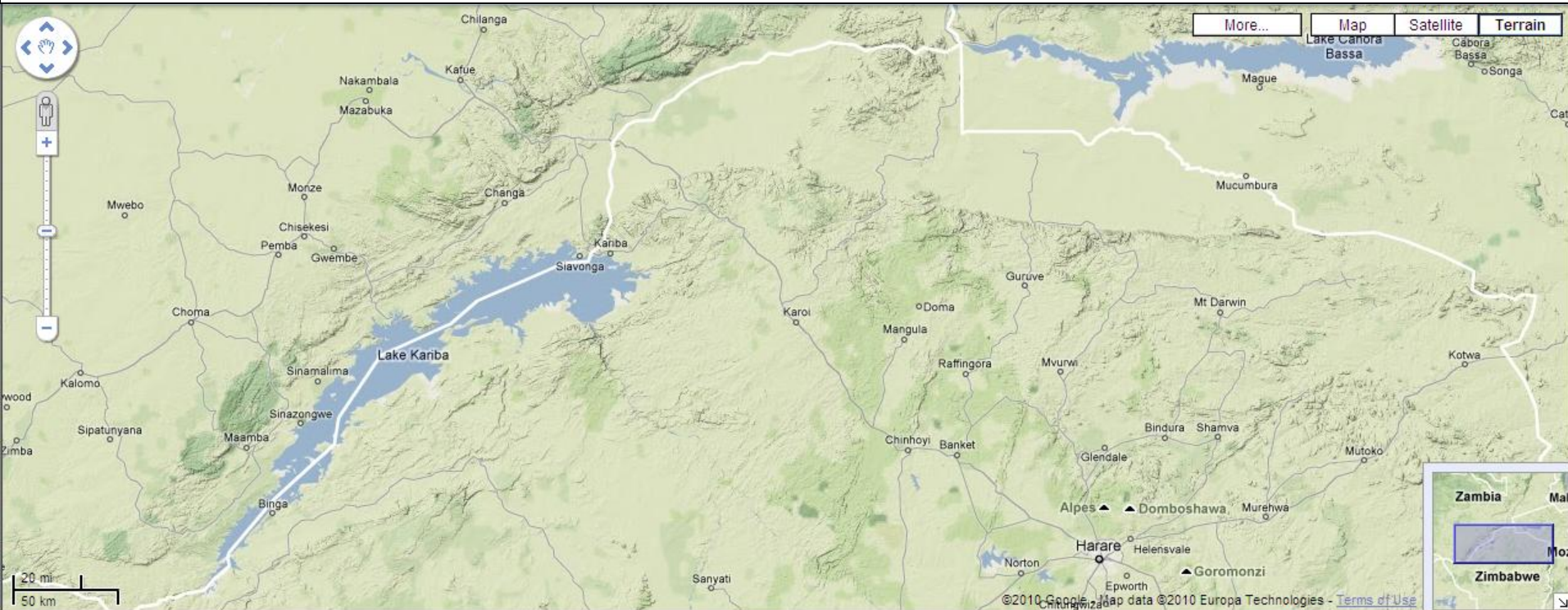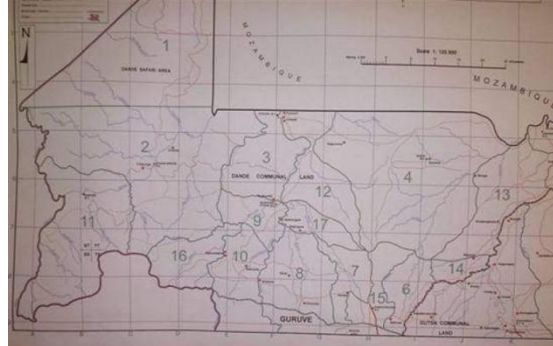
Mbire Wards 7, 8, 9, 15, 17
No electricity
No mobile phones
No FM radio
Low literacy levels
No formal roads linking Wards and villages

Phase 1: Technology trial

- Pilot of "second voice"
  - A solar powered device using Bluetooth to share audio content between devices
- Feedback to designer
  - Inability to hold sufficient charge to enable its use
- Devices were meant for use by village heads, teachers, extension workers (one device each)
- Pre-recording and local recording in local language

Phase 2: Digital extension

The digital extension model is described [here](#)

Digital Extension in Mbire

Knowledge Needs	Local Partners
Diverse: Water, Health, Crops, Livestock, Environment, Markets, LCDRR	**All government extension departments:** AGRITEX, Health, EMA, Social Services, Youth, ZINWA, Farmers' groups. **All local development agents:** NGOs, CBOs, PVOs & RDCs

Access to Knowledge: Context

- The Internet – penetration is low, especially in rural areas
  - 24.7% of global population
  - 8% of Zimbabwe
- Radio – no community stations
- Few Roads, impassable in rainy season and no formal roads linking communities
- Mobile phone
  - 18.75% in Zimbabwe (2009); 10% in 2008
  - GPRS launched in August 2009 by Econet
  - No signal in rural areas
- Electricity
  - 34% in Zimbabwe

Study Population

Ward Name	No of Households	Male Headed Households	Female Headed Households	Total Population
Ward 7	872	658	216	4850
Ward 9	1162	841	321	5808
Ward 15	1335	1036	299	6631
Ward 8	1640	1298	342	9419
Ward 17	907	667	240	6025
Total	5916			32733

Average family size = 5.5 people per household
Cost per households assume 75% adoption rate =

Cost per household	5.10	GBP/Household
Cost per person	0.52	GBP /Capita

Knowledge Stakeholders in Mbire
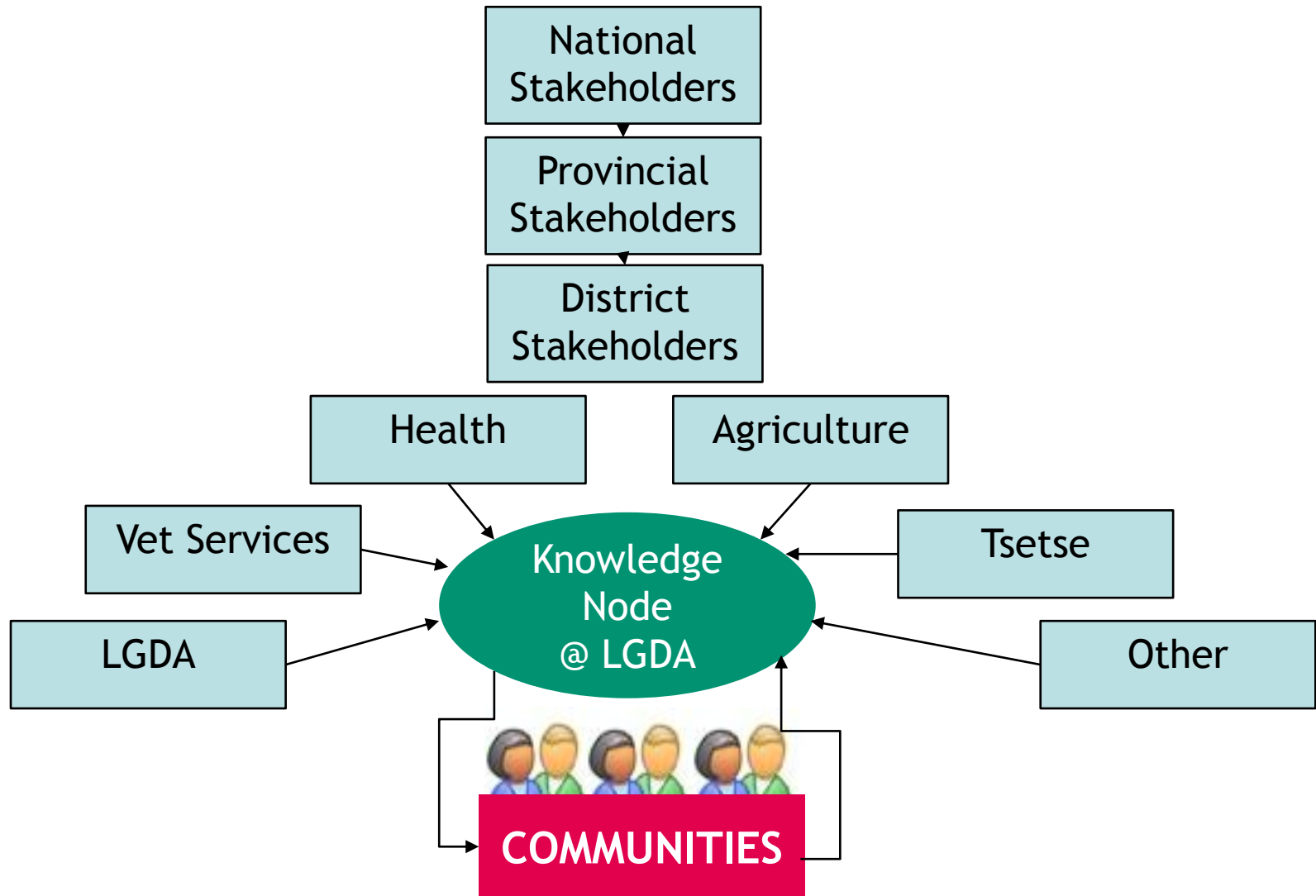
External recognition

- In 2010 the work was chosen as a finalist in the Stockholm Challenge
- News reports by BBC and SciDevNet, (2006, 2008, 2010)
- Article in peer reviewed Journal (2010)
- Chapter in book (2012)
- Articles in magazines, e.g. ICT Update
- The Herald, Zimbabwe, 15 May 2011
- Websites: Capacity.org | appropriatetech.net |

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Costs

> Cost of digital extension is about 15% of tradition extension service

> Comparative costs are given on the next page

Average family size = 5.5 people per household
Cost per households assume 75% adoption rate =

Cost per household	5.10	GBP/Household
Cost per person	0.52	GBP /Capita

Comparative Costs: Old and New

OLD	Cost Item Description (costs are in US$ and are per annum)	NEW
2760	Salary	0
1572	Allowances	240
0	Motor Cycle/Bicycle (plus repairs)	1040
0	Transport: Fuel	0
0	Content Development/Recording	120
20000	Brochures & podcast kit	280
24332	< Comparative Annual Totals >	1680

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What is it?

- Using local voices to share local content
- Local experts (e.g. Vets) develop knowledge products
- Digitising local content and local voices on appropriate media and formats.
- A collaborative and participatory process of all development stakeholders in content development and sharing

What is it?

- A community process in the selection of the community extensionist

- Community extensionists gather indigenous content for sharing

- Adoption of <u>appropriate technology</u> (in this Case, <u>podcasting</u>) by communities and other stakeholders

  ➢ In other contexts appropriate technology may include community radio, video, and web portals

- Sharing knowledge and information amongst beneficiaries.

- Capacity building of stakeholders in the knowledge development and dissemination processes.
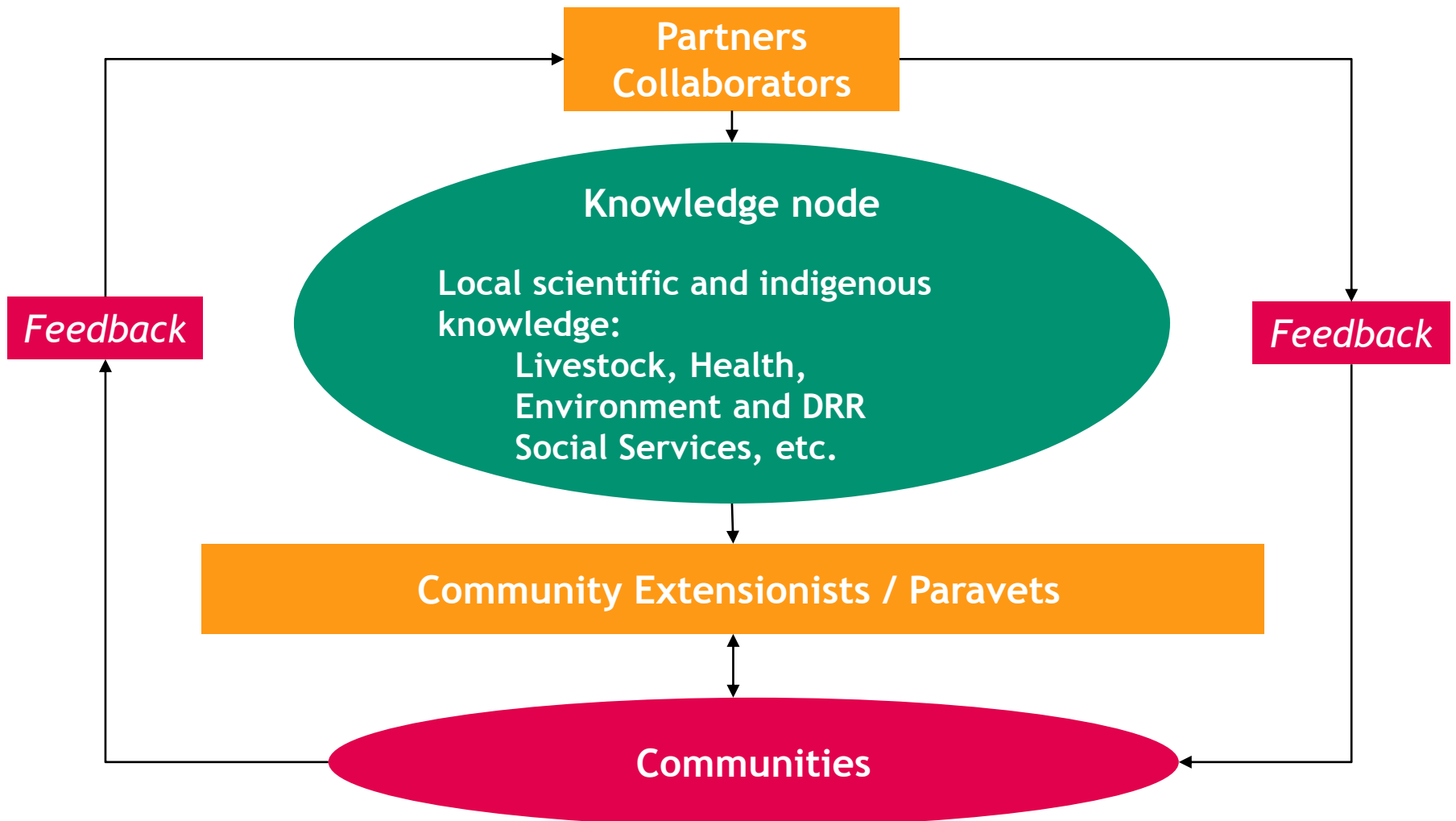
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How to do it?

⟳ Identify the need for knowledge sharing within the project design (the focus of the project may be livelihoods, water and sanitation, etc.)

⟳ Involvement of **all** stakeholders from project initiation through to the design phase

⟳ Understand planned knowledge distribution structures

⟳ Identify project champions (those who make things happen)

⟳ Establish a knowledge node to contain all content relevant to the communities

How to do it?

○ Carry out a mini-baseline survey to understand the following:

➤ Knowledge gaps by group/sector in community

➤ Possible project collaborators – all government development agents, NGOs, CBOs, PVOs, and other relevant agencies

➤ Community Power Balance

- Project enablers

- Knowledge strengths of local development agents

- Possible sensitivities generated by voice devices (regulatory issues)

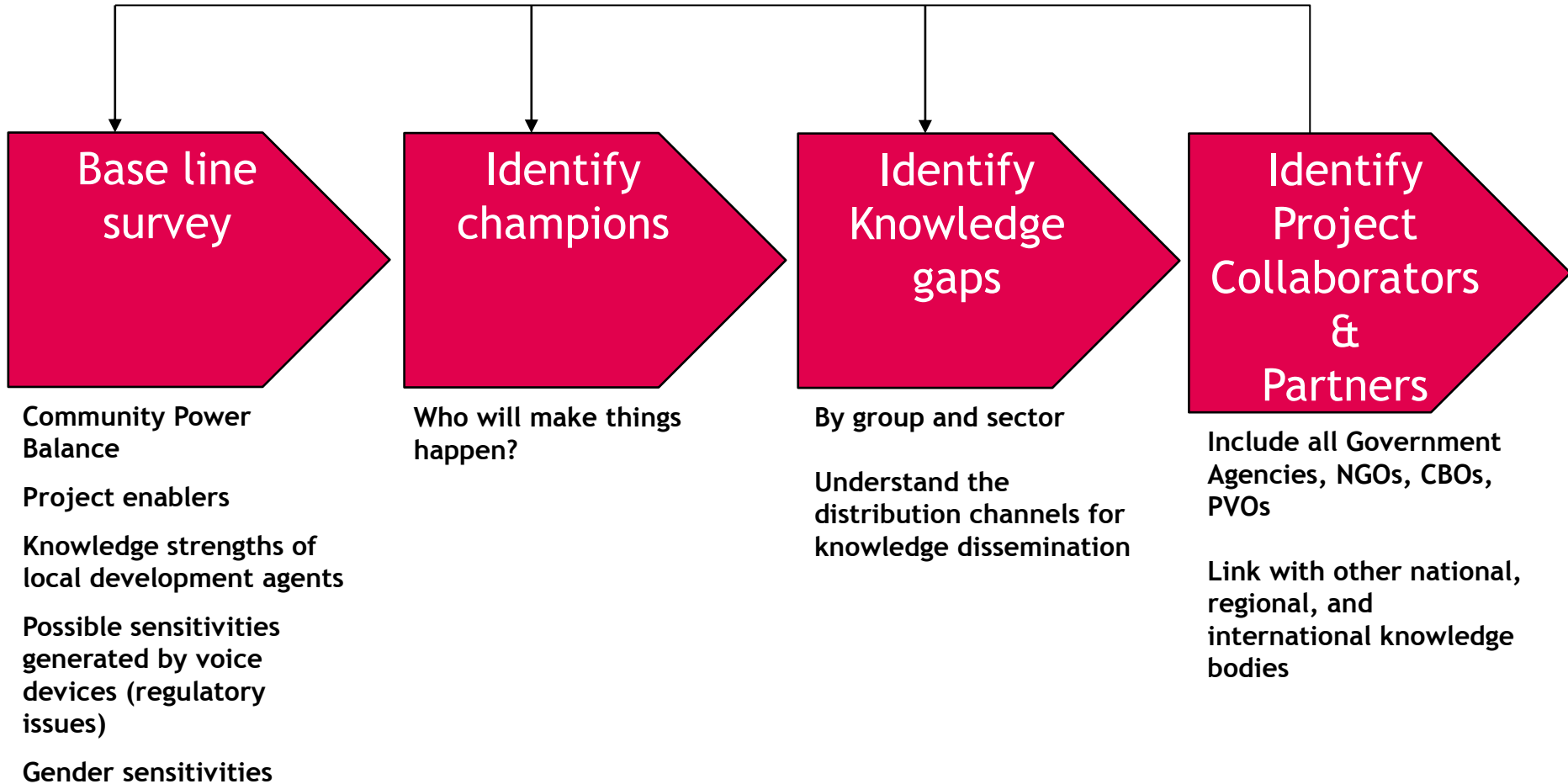- Gender sensitivities

How to do it?

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Stages of implementation

Involve partners throughout process

Base line survey

Identify champions

Identify Knowledge gaps

Identify Project Collaborators & Partners

Community Power Balance

Project enablers

Knowledge strengths of local development agents

Possible sensitivities generated by voice devices (regulatory issues)

Gender sensitivities

Who will make things happen?

By group and sector

Understand the distribution channels for knowledge dissemination

Include all Government Agencies, NGOs, CBOs, PVOs

Link with other national, regional, and international knowledge bodies

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Impact

The impact reported here results from all the activities undertaken within the project, all of which were part of the digital extension model. However the podcasting was only related to knowledge development and sharing.

- Cattle production in Mbire district increased from 2192 in 2007 to 4768 in 2009 as a result of improved livestock management due to supplementary feeding and disease control.

- 1077 participants were reached by the project of which 845 now have sufficient annual feed for their livestock compared to none in 2007.

Impact

- 751 group representatives and 7 animators who received intensive training are actively disseminating improved livestock management in Mbire district.

- Sorghum grain yields per farmer improved by an average of 127.75kg and 3375 scotch carts (900kg) respectively.

- Productivity of cattle in 2006/2007 increased from 2192 to 4768 cattle (117.5%) by December 2009. This is attributed to supplementary feeding and disease control, initiatives that were promoted by the project in the area.

Impact

- Mortality rate before the programme was at 20 % (Source: Department of Veterinary Services 2006), after the intervention it stood at 5% among participating farmers. The morbidity rate before the programme was at 30% and has been reduced to 15% by project end.

- Milk production increased from 1.5lts/animal/day (baseline) to 2lts per animal per day for 90 days.

- Carcass grade at abattoirs rose from manufacturing (US1.80/kg) to commercial and supper grade (US3.00/KG).

Impact

- Horticultural gardens established and 2032 small holder farmers were trained in establishment of garden nurseries and transplanting. Each garden generates crops worth US$1800.

- 15 small scale agro-processing enterprises now operational and involved in cooking oil extraction and peanut butter processing. The oil processing enterprises generating an average of US$400 to US$700.00 per month of which 40% was channelled towards the operational costs. Peanut butter mills generating US$150 to US$250 per month.

Impact

- Improved livestock breeds have also seen a total of 3276 hectares being put under sorghum, cow peas and guar beans production during the 2008/9 agricultural season compared to 2000 in 2007.

- Increased incomes as a result of increased yields. 800MT of Maize from Guruve smallholder farmers were sold at an average price of $280.00.

- Manure quality and quantity improved from 3 to 5 scotch carts.

Yields (in kgs.) per household by crop

Crop	2008/2009 Season	Target 2009/2010 Season2009/2010 Season% change from Base Year	2009/2010 Season	% change from Base Year
Maize	1051	1160	1656	57.56%
Sweet Potatoes	203	225	256	26.11%
Sunflower	175	1160	310	77.14%
Groundnuts	381	490	195	-48.82%
Soybean	283	310	489	72.79%

Note: The Groundnuts were not part of the project

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Software

⟳ <u>Open source software</u> for recording and conversion to MP3 format can be downloaded and used free of charge.

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Hardware

- [MP3](#) or [MP4](#) devices for play back
- Appropriate speaker system depending on the number of people and location
- Microphone for improved sound quality recording
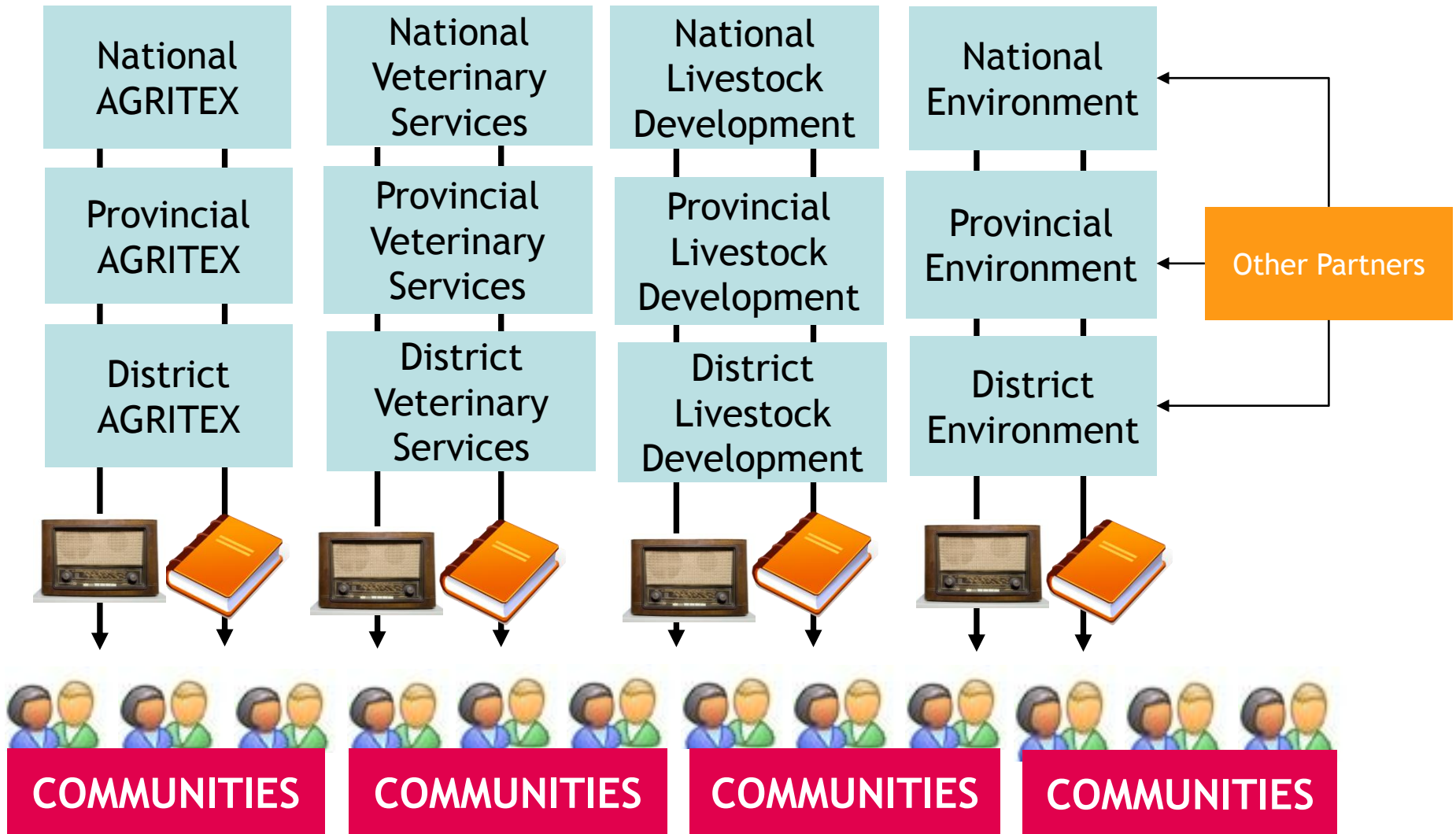- Cables for connecting devices as needed

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Traditional Extension System

◯ Traditional extension system is Government led and has the following characteristics:

- ➢ It is supply-led and top-down
- ➢ It is individualistic, each service is delivered in a silo
- ➢ Knowledge and information is shared in printed material or is delivered in person but infrequently.
- ➢ Extension officers are not from the locality and often do not understand the local language or dialect
- ➢ Content is static, revision and updates are very infrequent.
- ➢ Resources are controlled centrally and often in short supply
- ➢ High staff turnover means that staff expertise is often lost
- ➢ Monitoring and evaluation is often weak, impeding innovation
- ➢ Lacks resources and also works in silos (see diagram)

Traditional Extension Model

National AGRITEX	National Veterinary Services	National Livestock Development	National Environment
Provincial AGRITEX	Provincial Veterinary Services	Provincial Livestock Development	Provincial Environment
District AGRITEX	District Veterinary Services	District Livestock Development	District Environment

Other Partners

COMMUNITIES **COMMUNITIES** **COMMUNITIES** **COMMUNITIES**

Digital Extension System

○ <u>Digital extension system</u> was developed from analysis of the community needs:

- ➢ It is demand-led
- ➢ It is collaborative
- ➢ Knowledge and information is shared in local languages and voices
- ➢ <u>community extensionists</u> are selected by the communities and live within them.
- ➢ Content is continually developed, revision and updates are done as needed.
- ➢ indigenous knowledge, collected by the community extensionists are embedded in voice formats and shared

Digital Extension Model
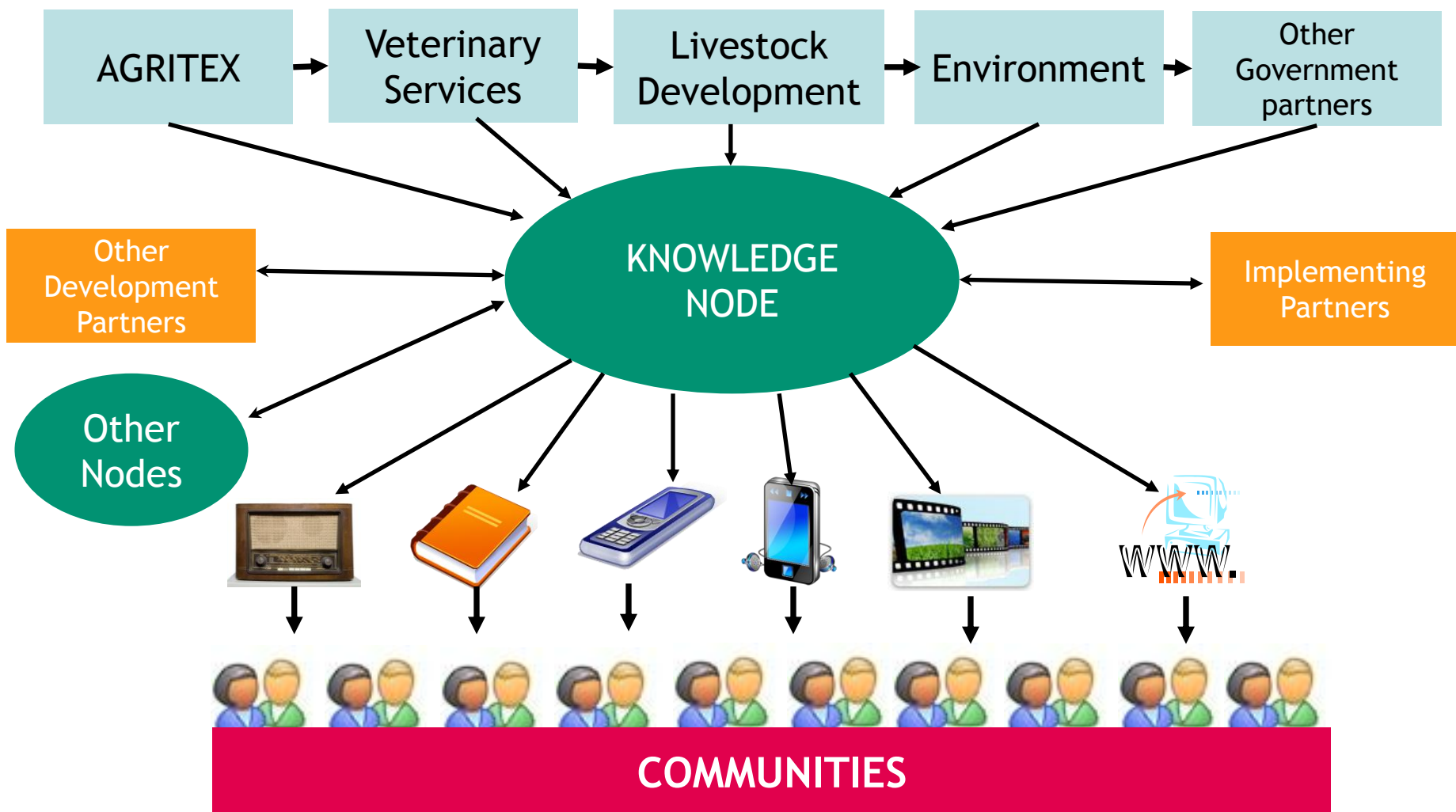
Digital Extension benefits

- Instant feedback is received by the Knowledge Core group.
- Community extensionists tap into a wealth of indigenous knowledge
- Content ownership shifts from experts to communities
- Technology has no bad days and is consistent

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Recording a podcast

Photo 1 of 6

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Listening to a Podcast - phase 2

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Immunizing an Ox

Mrs. Mashingaidze of Mbire, ward 8 immunising her ox following podcast instructions

Photo 4 of 6 ⬅ ➡ Guide

Weighing a cow, using a belt
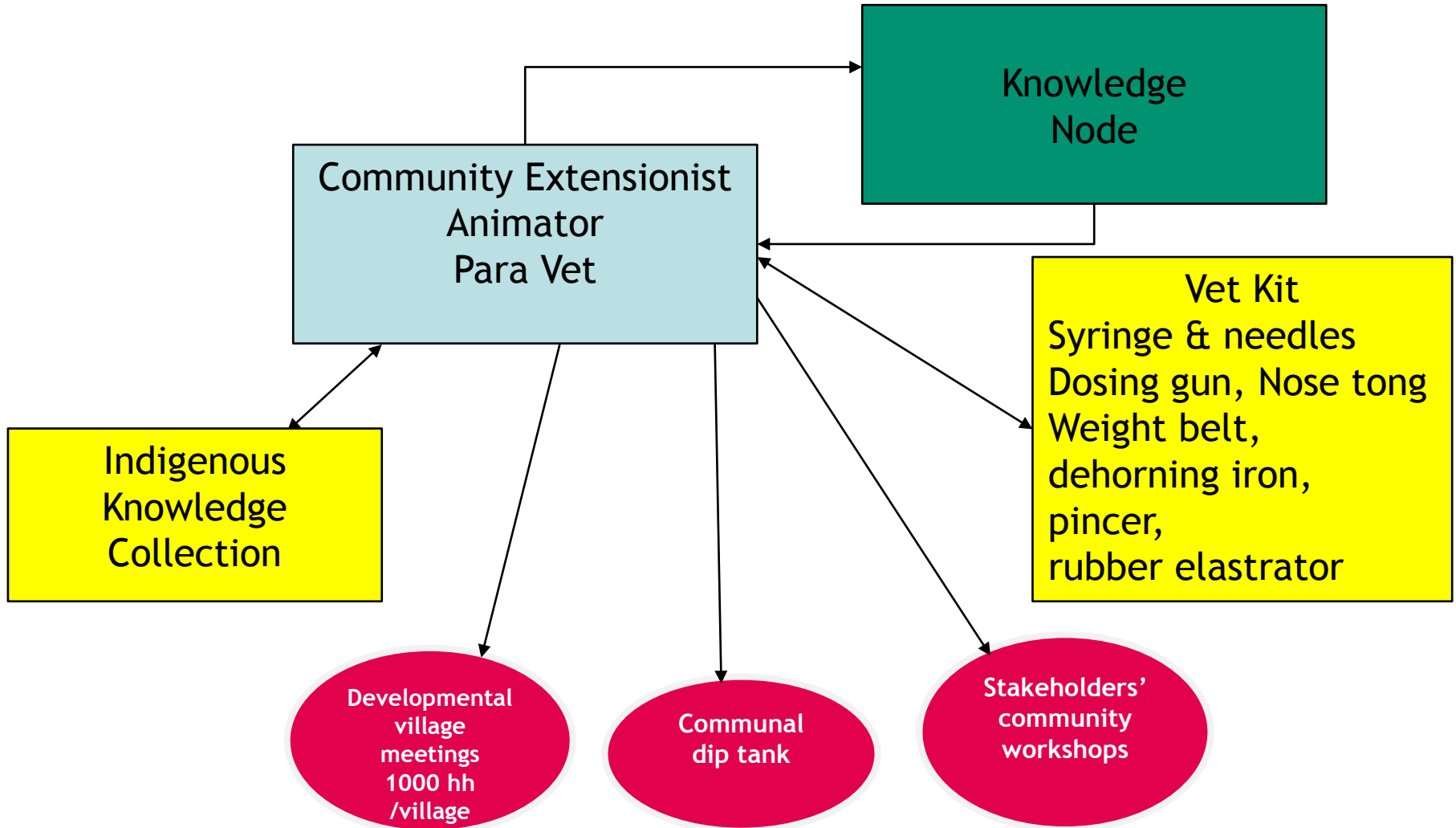

Photo 5 of 6

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Sustainability

○ Practice based on collaboration of all development stakeholders in a District or Province.

○ Based on development of capacities including content development, recording and dissemination skills.

○ All stakeholders are prepared to agree a funding model to sustain practices and operational costs of the knowledge node.

Sustainability

Knowledge Node

Community Extensionist
Animator
Para Vet

Vet Kit
Syringe & needles
Dosing gun, Nose tong
Weight belt,
dehorning iron,
pincer,
rubber elastrator

Indigenous
Knowledge
Collection

Developmental
village
meetings
1000 hh
/village

Communal
dip tank

Stakeholders'
community
workshops

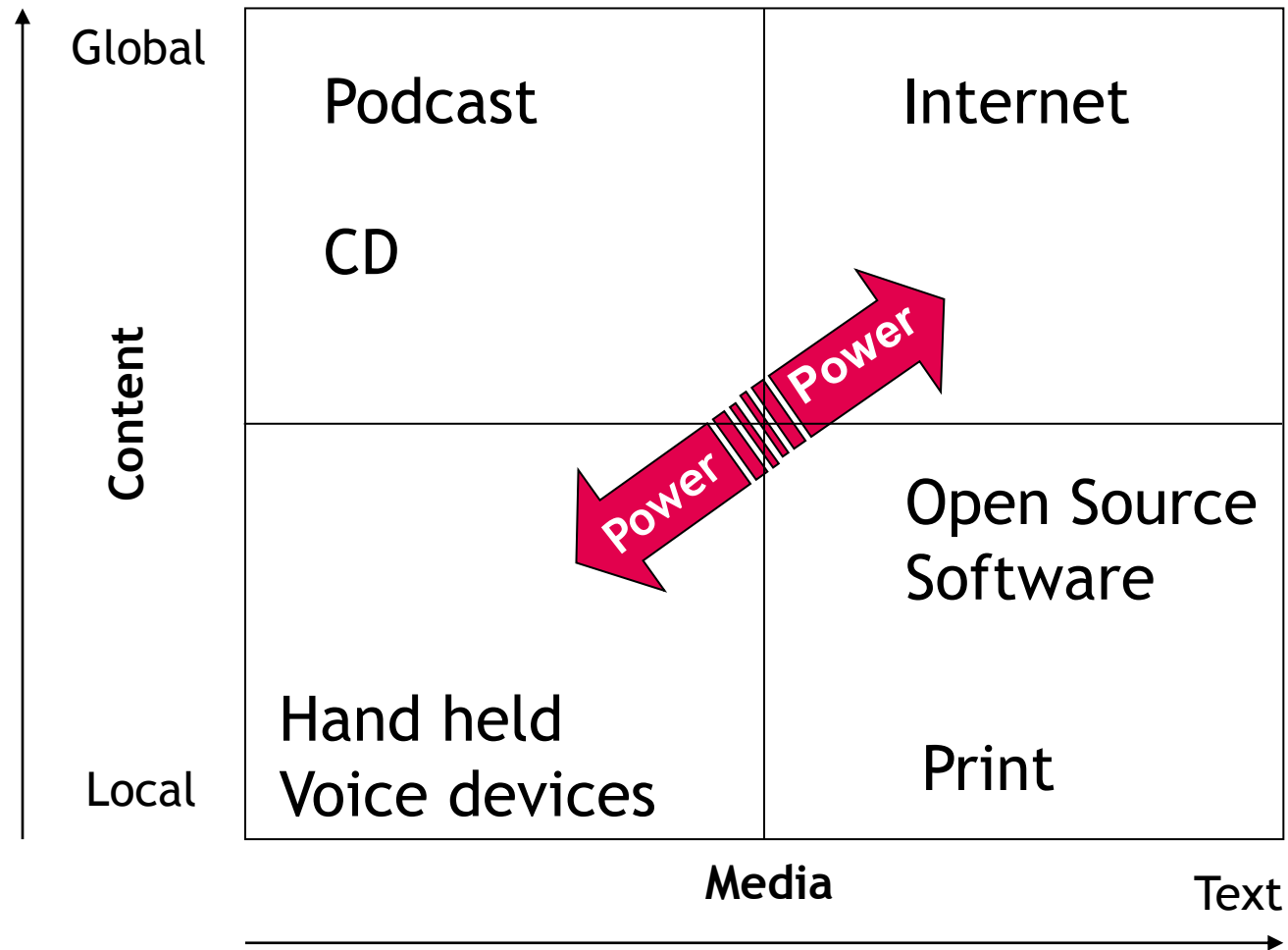End of section

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Theoretical base

"Traditional uses of ICT for development have relied heavily on text based media, often delivered via the Internet. Given that the penetration of the Internet is limited to 18% of the global population and that in developing countries there are typically relatively low rates of literacy, the playing field of power is hardly heading for equality. How will the power balance be affected if we think of voice media and local content? The Figure on the next page shows that for devices such as hand held voice devices which can record local content the power balance is tipped towards local people. In cases where the Internet predominates in the delivery of text based media the balance of power is away from local people.

The figure helps us to conceptualise the effect of both media type and content source as determinants of power balance. We might propose that power is more likely to be retained at the local level if voice media and local content are used. The case study has illustrated a practical project where all the stakeholders were sensitive to the potential ability of technology to change the power relations in a community. The case is an illustration of an intervention which is at the bottom left quadrant of the Figure, using local content in local voices."

Source: Grimshaw, D.J. and Gudza, L.D. (2010:9)

Media, Content and Power

Source: Grimshaw, D.J. and Gudza, L.D. (2010)

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References

⟳ Talyarkan, S., Grimshaw, D.J. and Lowe, L. (2005) Connecting the First Mile: Investigating Best Practices for ICTs and Information Sharing for Development, Practical Action Publishing: Rugby, 48pp.

⟳ Grimshaw, D.J. and Aria, R. (2007) Local Content, Local Voices, ICT Update, May 2007, CTA: Leiden.

⟳ Grimshaw, D.J. and Gudza, L.D. (2010) Local Voices Enhance Knowledge Uptake: Sharing Local Content in Local Voices, Electronic Journal of Information Systems in Developing Countries, Vol. 40, (2010) 1-12.

⟳ Oosterlaken, I. Grimshaw, D.J. & Janssen, P. (2012) Marrying the capability approach, appropriate technology and STS: The case of podcasting devices in Zimbabwe, in: Ilse Oosterlaken & Jeroen van den Hoven (Eds.) The Capability Approach, Technology and Design, Springer: Dordrecht.

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News Reports

- BBC Technology News, [7 February 2006](#)
- Podcasting for the developing world, SciDev Net, [19 June 2008](#)
- Podcasts to inform poor farmers, SciDev Net, [13 January 2010](#)
- Interview (audio) Radio New Zealand (12 mins)

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Lessons

- Digital extension does effectively complement traditional extension systems
- When knowledge is shared, communities use it to positively transform their livelihoods
- Knowledge shared in local languages and voices enhances the ownership within the community
- When the community is given a choice of technologies they will adopt those they need and there is an increase in uptake
- Capture and use of indigenous knowledge reinforces content ownership in the community
- Knowledge shared equally amongst women and men, regardless of literacy levels.

Lessons

- ⟳ Enduring quality of technology per se which serves to disturb traditional practices and cultures in the name of "progress".
- ⟳ ICTs do provide new opportunities for knowledge transfer and uptake, but may also reinforce or disrupt existing power hierarchies and exclusionary practices.
- ⟳ Power is more likely to be retained at the local level if voice media and local content are used.
- ⟳ Knowledge delivery via Internet needs to be questioned
  - ➢ Rather than assumed

The last word…

- *"Podcasting is very useful, it gives a set of instructions to people, the content doesn't change so I can listen several times. I also get the lessons quickly unlike when I go to formal lessons which take longer. The content is consistent."* **- Sheba Majoka**

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Glossary

Term	Meaning
Appropriate technology	Encompasses technological choice and application that is small scale, labour intensive, energy efficient, environmentally sound and locally controlled.
Community extensionist	A person elected by the community in which they live to be the facilitator of knowledge sharing and collection of indigenous knowledge. They do this by using appropriate knowledge products in appropriate formats. For example using audio players.
Digital extension service	Is a demand-led collaborative approach that uses digital content to deliver benefits to the community.
mp3	A common audio format used for recording and playing music or voice on digital equipment

Glossary

Term	Meaning
mp4	An audio and video compression standard that allows the storage of audio video files to be streamed over the internet or stored on media like CDs or DVDs.
Open source software	Open source refers to a program in which the source code is available to the general public for use and/or modification from its original design free of charge
Podcasting	Podcasting is a way of subscribing to media files and downloading them to your computer. The projects and approach described in this Guide are not strictly speaking using podcasting. Although we record audio files we do not expect users to download them.
Technology	Technology includes physical infrastructure, machinery and equipment, knowledge and skills and the capacity to organise and use all of these

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