

The 'Wambui' Project

Final Technical Report

DFID Project R7425: Appropriate livestock extension.

March 2002

The Project Team:

**Robert K. Bain
Jon C. Tanner
David Campbell
Kate Lloyd-Morgan
Francis Mburu
Rosemary Kinoti**

**Mary Gichuru
Mike Bicker
Nicky Lawrence
Chris Garforth
Joseph Kariuki
Leslie Duckworth**

**Tabitha Gitonga
Obeid Gitonga
Jewa Kimutua
Lucy Kinyua
Mercy Mbaina
Kenneth Miriti**

**Representing: The Mediae Trust
Agriculture Information Centre, Kenya
Development Communications, Nairobi
CfBT Educational Services, Nairobi
University of Reading, UK**

Additional Technical Inputs from:

**Emyr Owen, The University of Reading, England, UK
Julie Fitzpatrick, Catriona Bell & David Barrett, The University of Glasgow, Scotland, UK.
Louis Mtenga, Sokoine Agricultural University, Tanzania.
David Sedalo, LPRI, Mpwapwa, Tanzania.
John Lekasi & Stephen Kimani, Kenya Agricultural Research Institute, Kenya.
Danni Romney, International Livestock Research Institute, Kenya.
Karen Hoare, Northumbria Health care Trust, England, UK.
Andre Bubear, International League for the Protection of Horses, England, UK.
Nicola Bradbear, Bees for Development, England, UK.
Phil Harris, Henry Doubleday Research Association, England, UK.**

Executive Summary

The Wambui Project was designed and conducted as a short, low-cost pilot-project to provide preliminary research data on the effectiveness of a variety of information pathways into rural communities in Kenya. At the same time, the project produced and delivered extension materials into these communities, ensuring that immediate developmental objectives were also met.

Priority information needs were identified in participation with rural communities and simplified technical information written in collaboration with expert groups in each subject area. Six thousand of each of eight booklets was delivered through primary schools, churches, women's groups and the Government extension services.

Background data on the "reach" of existing information services and specific data on change in knowledge and attitude attributable to the project were collected by means of questionnaire surveys.

An underlying hypothesis was that primary schools could act as useful conduits into rural communities, using booklets designed to be of educational use in both the English language and agriculture portions of the curriculum. While this was shown to be true, changes in the primary school curriculum necessitated further study on the likely future role of agriculture in these schools.

Churches were shown to be highly successful, rapid and popular means of reaching rural communities.

Project data was put into context by a study which related the questionnaire data with existing market research data on information services in Kenya.

Background

Comic strips and similar serialised print formats (e.g. photo-stories) have been used to disseminate development-related information to both urban and rural populations. This has usually been in support of short term, intensive campaigns where external project funds have been available for a substantial investment in the expertise, equipment and/or professional services required. Examples are found in the health and nutrition sector in Latin America, in Aids awareness and prevention campaigns in southern Africa and in pest management of horticultural crops in West Africa.

However, there is little systematic research into the effectiveness of these media. Most of the available data comes from project evaluations, or from the pre-testing (formative evaluation) of the materials prior to production. Most of these studies do not use research designs that allow conclusions to be drawn about the effectiveness of comic strips or about their cost-effectiveness in comparison with other media. Nor do they provide any general guidelines on the best practice in the design and use of such media. The data do suggest, however, that:

- Familiarity with comic strips in other settings (eg daily newspapers, children's magazines) significantly affects the ability to interpret intended information
- There are very few, if any, successful examples of strips which communicate entirely by the pictures (whether comic drawings or photographs) with no supporting text
- Care must be taken with the visual cues to sequence (ie will people recognise the series of pictures and words as a sequence, or as a set of independent pictures with captions?)
- Caricature-style characters can be misinterpreted by people who are unfamiliar with the genre
- Balance between humour (which people familiar with the format will expect) and developmental content must be carefully judged

In response to research in Kenya showing that public/private livestock services reached less than 20% of households in rural areas (and that these tended to be the wealthiest in the communities), a pilot study was funded by the KARI/DFID NARP II Helminthology Group and carried out in the Kiambu District of Kenya by the MoA/KARI/ILRI/DFID Smallholder Dairy Project. This looked at the effectiveness of primary schools as a route for delivering technical information to dairy farmers.

An illustrated children's story aimed at primary school children was developed which contained messages relating to management strategies for dairy cows. The booklet was introduced as an English language exercise into all classes in four primary schools in Kimende location, Lari Division. Transect surveys were carried out in the schools' catchment areas before and after distribution of the booklet in order to test parents' knowledge on watering and de-worming. Approximately 30% of adult respondents had seen the booklet at the post-distribution survey. The number of parents who could answer the watering question correctly, changed from 0% before distribution to 10% afterwards but there was no increase in knowledge related to de-worming. After distribution, the study found that approximately 50% and 10% of children tested knew the correct answer to the watering and de-worming questions respectively. The greater effectiveness of the watering message may have been due to the more visual way in which the information was presented in the booklet or alternatively to the level of preconceived knowledge in the community.

The demonstrated success, particularly with children of this method of delivering agricultural extension will have considerable impact on smallholder livestock productivity in poorer households which receive very little, if any, formal livestock extension inputs. For example, the KARI/DFID NARP II Helminthology group estimated the potential economic impact of distributing information giving advice on correct anthelmintic treatment of adult cattle. On the basis of a cost-saving per household of 1,000 Kenya shillings per year as the difference between current practice and KARI's recommended practice and an inflated cost of the dissemination media of 20 shillings per copy, the break-even point for the extension material is at an uptake rate of only 2%. At uptake rates above this, the investment in appropriate extension materials and messages rapidly becomes extremely beneficial and at 30% uptake (the level of awareness in the preliminary trial) the national saving would be conservatively estimated at £1 million per annum.

Project Purpose

The purpose of the project was to develop appropriate extension messages and materials and to use these to produce research data on the effectiveness of various dissemination pathways and the effectiveness of the materials themselves.

Research Activities

Research activities can be divided into 5 portions, each of which is the subject of a separate report available as appendices to this document:

- Information Needs Assessment

This activity used a participatory focus-group approach to gain information on crop and livestock information delivery pathways that were active in the target area at the start of the project. It also collected data on the information needs of the community as perceived by the farmers themselves and household preferences on dissemination routes.

- Base-line data and existing dissemination pathways.

Using transect survey techniques, information was collected to characterise the farms and households in the study area including their affiliations to schools, churches and other groups. Data was also collected on household experiences and preferences in relation to existing agricultural information delivery.

- Knowledge and attitude changes during the project.

The effectiveness of the extension materials and delivery pathways was studied using transect surveys to determine changes in knowledge and attitudes during the course of the project period. This included further data on the penetration of print material into households in the area and preferences on language and delivery routes.

- Agriculture in the primary school curriculum.

A study group approach was taken to determine the current status of agriculture in the primary school curriculum in Kenya and the impact that changes to the teaching of agriculture may have.

- Agriculture education pathways in Kenya.

The activities and research data collected as part of the current project were put into context by comparing the Embu data with available information on the wider Kenyan situation.

Outputs

LogFrame Output 1 “Appropriate extension messages and formats identified, validated, produced and disseminated”.

6,000 copies of each of eight booklets were produced and disseminated:

- “Healthy cow, more milk”. Originally produced under NARP II, reprinted and distributed under R7425.
- “Healthy sheep pay the medical bills”. Originally produced under NARP II, reprinted and distributed under R7425.
- “Better Manure, better crops”. produced in conjunction with the KARI/HDRA/ILRI Manure Management Project.
- “Tethered goats, less work”. Technical content identified by DFID LPP Project R5194, University of Reading.
- “Good calf, good cow”. Technical content identified in conjunction with DFID AHP Project R7271, Glasgow University.
- “Bees for wealth and health”. Technical content identified in conjunction with Bees for Development.
- “Clean hands, clean milk”. Technical content identified in conjunction with DFID AHP Project R7271, Glasgow University.
- “Donkey work made easy”. Technical content identified in conjunction with The International League for Protection of Horses.



The Wambui Series

Needs Assessment

Background information on the area.

Kyeni Division is an area of high population density, averaging 670 people per cultivated km². With a South East facing aspect on the slopes of Mount Kenya, the Division extends from a Tea zone at the higher altitude end down through a coffee growing zone towards increasingly arid terrain furthest from the mountain. A wealth gradient is reported, with the poorest farms at the drier end of the Division

The current study concentrated on the maize-coffee zone. The following crops predominate: coffee, maize, beans, bananas, cassava, paw-paw, passion fruit, mango, vegetables, Napier grass. The most important livestock are poultry, goats, cross-bred cattle and bees.

Community mapping

Six focus-groups were convened which drew up community maps at the sub-location level. These maps showed the location of features of importance to the communities – roads, village boundaries, churches, schools, shopping centres etc. These maps were used as the basis for identifying distribution points for the booklets and for planning questionnaire survey transects.

Agricultural information sources, flows and preferences.

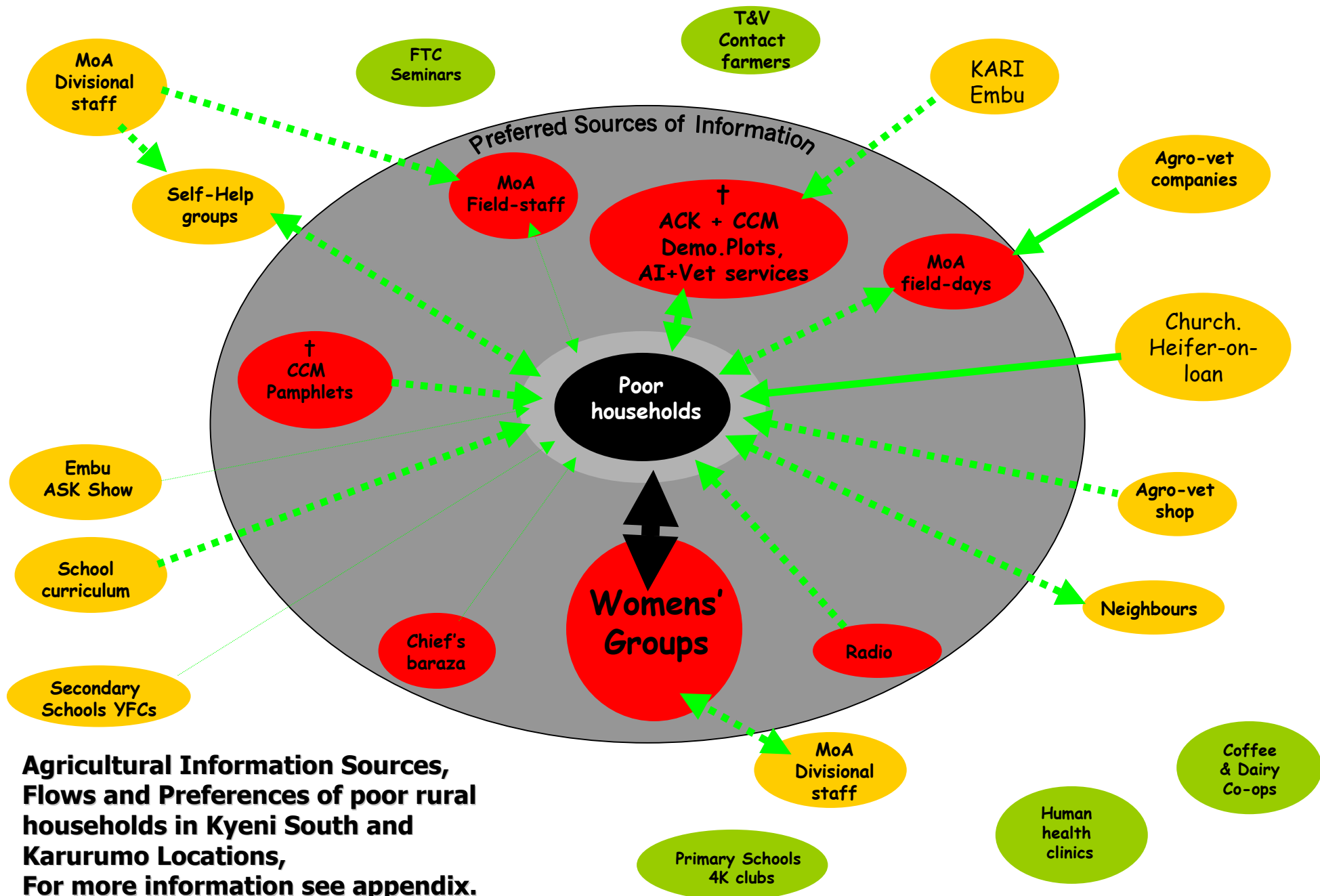
The figure opposite shows the community perception of sources and flows of agricultural information. Those information sources most preferred and trusted are closest to the centre of the diagram. Note that not all of these listed as trusted sources currently distribute any agricultural information.

Preferred formats and language.

The focus groups considered that printed information should be well-illustrated, cost not more than 10 shillings, be widely available and printed in English or Kiswahili. The preference for English was based on the presence of young people in most households who could translate.

Livestock information needs.

A list of desired information topics was drawn up by the focus groups for each of the livestock species. Many of the topics related to disease prevention and diagnosis, feeding, housing and upgrading.



**Agricultural Information Sources,
Flows and Preferences of poor rural
households in Kyeni South and
Karurumo Locations,
For more information see appendix.**

Survey Data

Base-line Information.

The typical household in this area is a small family farm practicing mixed crop/livestock agriculture with one dairy cow, two or three goats (occasionally sheep) and a few chickens. In addition some have a hive or two of bees, a couple of rabbits or a draught cow.

Most households attend church, are members of a milk or coffee co-op and have at least one child in primary school. Many of the women are members of a Women's Group. The majority of households have access to radio but not TV and slightly less than half regularly see a newspaper. Most have little access to print material and what they do see is mainly of a religious nature.

Radio, Chief's barazas (meetings), neighbours and MoA field days are cited by large numbers of respondents as being current sources of information. When asked how they would like to be given information, the majority wanted visits from MoA field staff or MoA Field Days, with leaflets also being popular.

Distribution of booklets.

Approximately 85% of the households surveyed had seen one of the booklets by the time of the third transect survey. Of these, 37% had received the booklet from church, 25% from MoA staff, 20% from School, 8% from a Women's Group and an intriguing 10% who had received them from "Other" sources which had not formed part of the distribution strategy. 90% of respondents who had seen the booklets expressed the opinion that they "liked" them. 86% of respondents who had seen the booklets reported that they had learned something from the booklets. Many of the things learnt related to simple "common knowledge" issues rather than to more technically complicated matters.

Knowledge and Attitude changes during the project.

An interesting difference exists between the attitude to language before and after release. When asked generally about language preference, the largest response was for Kiswahili (40%) followed by Kiambu (25%) and English (23%). However, when asked what language this type of material (the Wambui booklets) should be produced in, those that had seen the booklets response was English (59%), followed by Kiswahili (25%) with Kiambu and Kikuyu well behind (at 8% each). Among those who hadn't seen the booklets the proportions remained equal at 25% for each language.

With regards to route of delivery, again experience of receiving the booklets led to a change in attitude. While churches and schools came well down the list of preferred sources of agricultural information in the pre-release survey, when asked how we should reach households with “Wambui”-type material, churches (57%) and schools (27%) were by far the most requested routes, with Ministry of Agriculture in third place at only 8%. There was little difference between respondents who had seen the booklets before and those who were shown them for the purposes of the questionnaire.

Technical questions.

Responses to the question “How much water should a milking cow be given?” are typical of a topic where respondents feel they should know the answer, they don’t hold any strongly rooted views and there has been little previous information made available. “Don’t know” figures are low and a majority (52%) responded “2 debes per day” before release of the booklets. The figure suggested by the booklet was 4 debes per day and, after release, the number of respondents repeating this figure rose from 9% to 35%, while the number citing 2 debes has halved from 52% to 26%.

In contrast, where previous information has been provided, respondents may hold stronger views and be less amenable to change. An example here is the response to the question “How often should you deworm a milking cow?”. Strong marketing pressure has resulted in 79% of responses being 3 or 4 times a year. While this has dropped to 68% after release of the booklet suggesting zero as the answer, the change is small and the increase in “correct” response has only increased from 0% to 6%.

Where “Don’t know” levels are high, there appears to be scope to alter the views of the remainder who do make an attempt to answer the question. An example here being the change in response to the question “What causes sheep to have diarrhoea?”. A pre-release 83% in favour of “worms” amongst those attempting a response drops to 36% after release, coupled with an increase from 15% to 65% providing the desired response of a “dirty, wet boma”.

However, the data highlights the gulf between influencing knowledge/attitude and influencing farming practice. While observation suggests that a very large majority of farmers tether their sheep and goats by the leg, 95% of farmers were able to correctly answer that it is better to tether by the neck, even before release of the booklet.

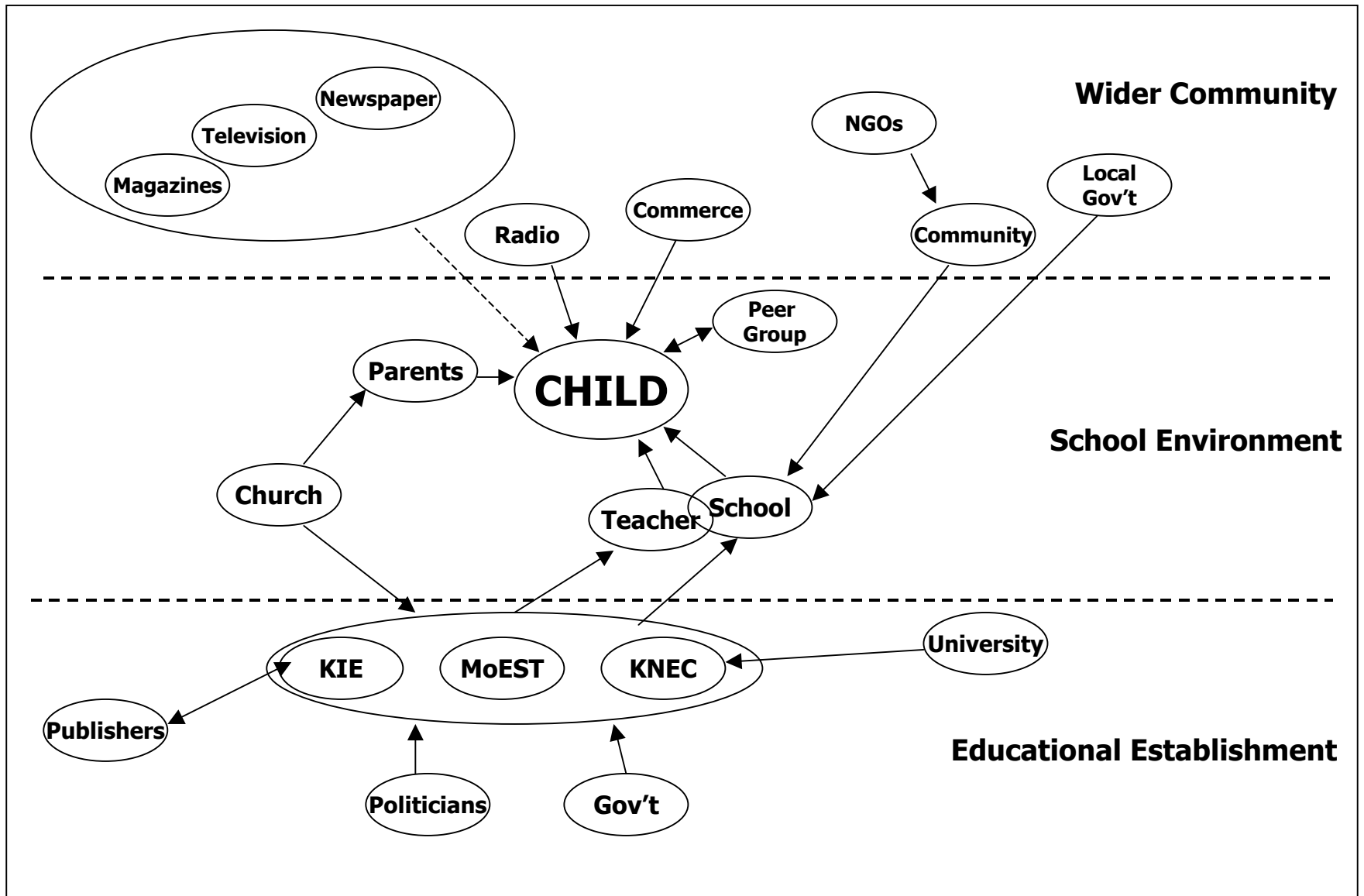
The Educational Sector

The Kenya primary school curriculum is undergoing changes designed to enhance its performance by rationalising the number of examinable subjects. As part of this process, there is reduced emphasis on agriculture and other important life-skills such as business education, home science and craft. These subjects are still included in the curriculum but with reduced time allocation. Since these subjects are non-examinable, it is possible that schools will cease to teach these properly, parents will be unwilling to buy books and pupils will see little point in studying them. Yet since the majority of pupils will not continue education beyond primary school level, these life-skills are essential to their own well-being as adults and to the future productivity of the Kenyan economy. This is particularly true in rural areas where educational attainment levels are lower and non-farming employment opportunities are scarce.

Co-curricular activities that should reinforce the formal education in agriculture and home-life skills are receiving less support than in the past, with 4K clubs and school shambas often neglected or non-existent. At a time when agriculture is receiving less emphasis in the classroom it is more important that these co-curricular activities are strengthened.

A number of options for how primary schools might include provision for life-skills in the future were explored by a group of stakeholders. The option which found most favour with the group was that important agricultural topics should be included in the science and GHC (Geography, History and Civics) syllabuses. A more radical approach where the entire curriculum was refocused to highlight key skills as cross-cutting issues received a more cautious welcome from the stakeholders.

The figure opposite shows the institutional context and influences in Kenya as defined by the stakeholders.



Institutional Map of Educational Influences.

Communication pathways in Kenya

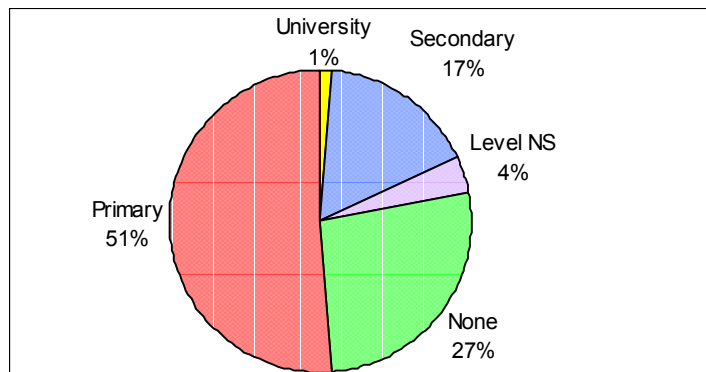
- putting the project in context

Any effort dedicated to disseminating agricultural information must consider that Kenya is young and does not always have access to education. It is, however, desperate for agricultural information.

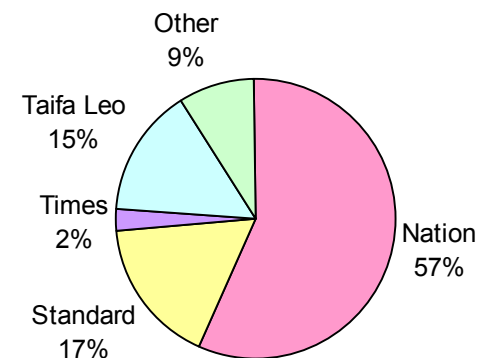
In order to meet this demand we must make better use of the many existing communication pathways. Although agricultural extension may be failing to reach significant numbers of the rural poor, commercial and other information does manage to permeate into even the most remote and disadvantaged communities.

49% of the population of Kenya is under 17

The level of education attained in Kenya

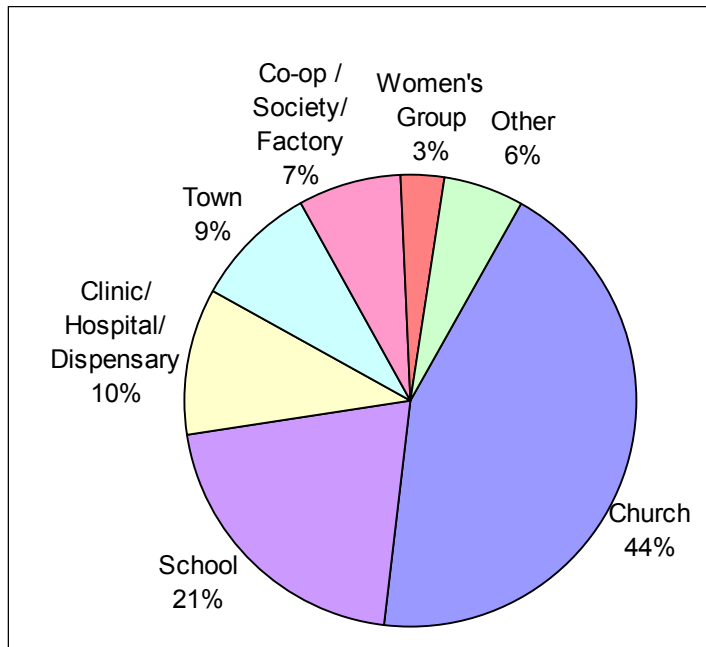


Newspaper readership in Kenya weekly



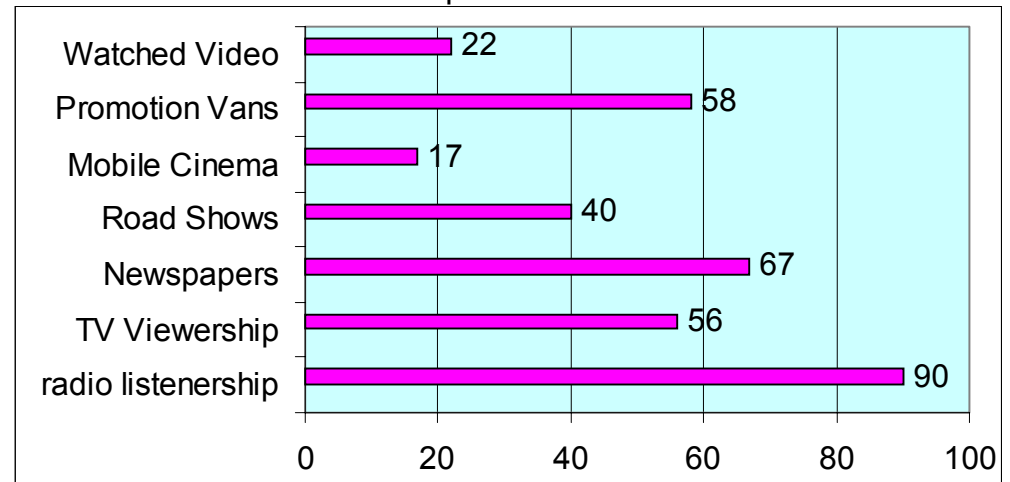
(Source: Steadman and Associates 1998)

Where print material is read in Embu District



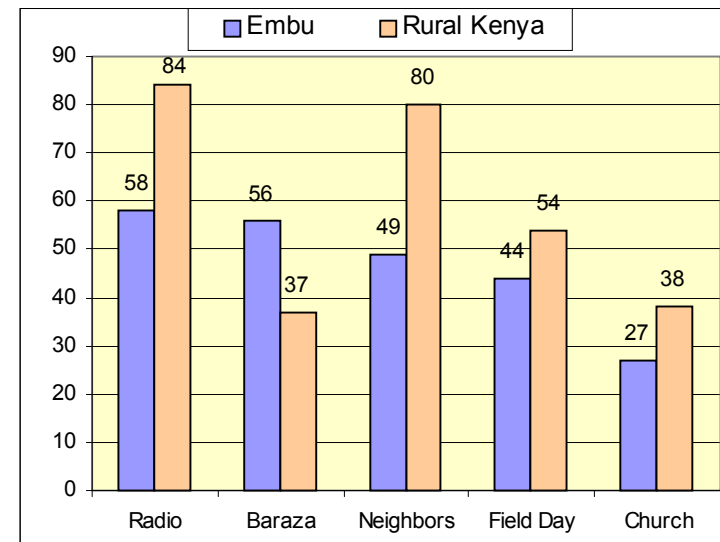
**KBC Radio is by far the most widely listened to station in Kenya.
79.7% of (15-17) year olds across all social classes listen to KBC daily.**

Media activities exposed to in the last 12 months



(Source: Steadman and associates 2001)

Sources of farming information – Embu compared with National



Contribution of Outputs

Direct Information Provision. The project reached an estimated 7,300 poor rural households with simple, appropriate farming information. This contributes directly to the programme goal “benefits for poor people generated by the application of new knowledge on the management of livestock”.

New Research Data.

Information needs of the rural poor. The project showed that there was a large and unmet demand for farming information. The information deficit related to basic farming information and not simply research outputs.

Current information provision. The project found that traditional extension pathways were inadequate and no longer reaching appreciable numbers of households. However, when provided with materials for distribution, extension agents became more active, suggesting that improved incentives could transform the current position. Alternative pathways were popular and effective but not currently engaged in delivery of farming information. Households were found to have little access to print material but a large interest in such material.

Alternative dissemination pathways. Primary schools were effective and trusted routes for delivery of information to poor households. Children appeared to act as effective extension agents and a bridge between print material and illiterate parents. Churches were found to be particularly effective in rapid dissemination of materials, are trusted by the community but unlike schools not viewed as a source of technical knowledge. Women’s Groups had poor reach, tended to be very small and were difficult to use as dissemination points.

Programme promotion. The project outputs have been widely cited by DFID, LPP and others as an example of good practice (a few instances are shown opposite).

SPARC

Newsletter for Sustainable Control of Parasites in the Tropics

Issue 3

Published by the ILRI, Los Baños

A comic book *Healthy Sheep Pay the Medical Bills* produced in Kenya (below) graphically puts parasites in their place in the daily life of most livestock owners. The project that produced the book has a major commitment to parasite control. So why do only four pages of the 12 page book mention worms or dewormers? Much of the book is devoted to simple management methods (such as improved shelter, hygiene, feed supplements and grazing), and to engaging the reader in a problem that they could appreciate directly; a family did not have enough money to pay the hospital bills for one of their children. To raise cash they had to sell their only ram. Advice on sheep health and management in the book is directed at making sure the next time a lamb is born, there is a big healthy lamb to sell that is worth more money. For that family, it is not chemical resistance, not worms and not poor animal husbandry. The problem is the lack of cash. Effective chemicals, worm control and better husbandry are the family problem. And that is where most helminth problems of production problems which in turn are parts of human development problems.

Wambui finds out....

Parasites in the Tropics

March 2000

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IMPROVING POOR PEOPLE'S LIVELIHOODS



APPROPRIATE EXTENSION MESSAGES

DFID - WORKING IN KENYA

Educating girls before they drop out of the schooling system can make a vital contribution to the elimination of poverty in rural Africa. If women have a good grounding in agricultural knowledge they are better able to run productive farms, to raise healthy, well-nourished families and to secure an education for their own children. How can we reach this group?

IN THIS ISSUE

BEES FOR WEALTH AND HEALTH

